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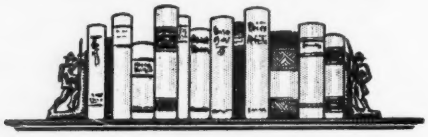

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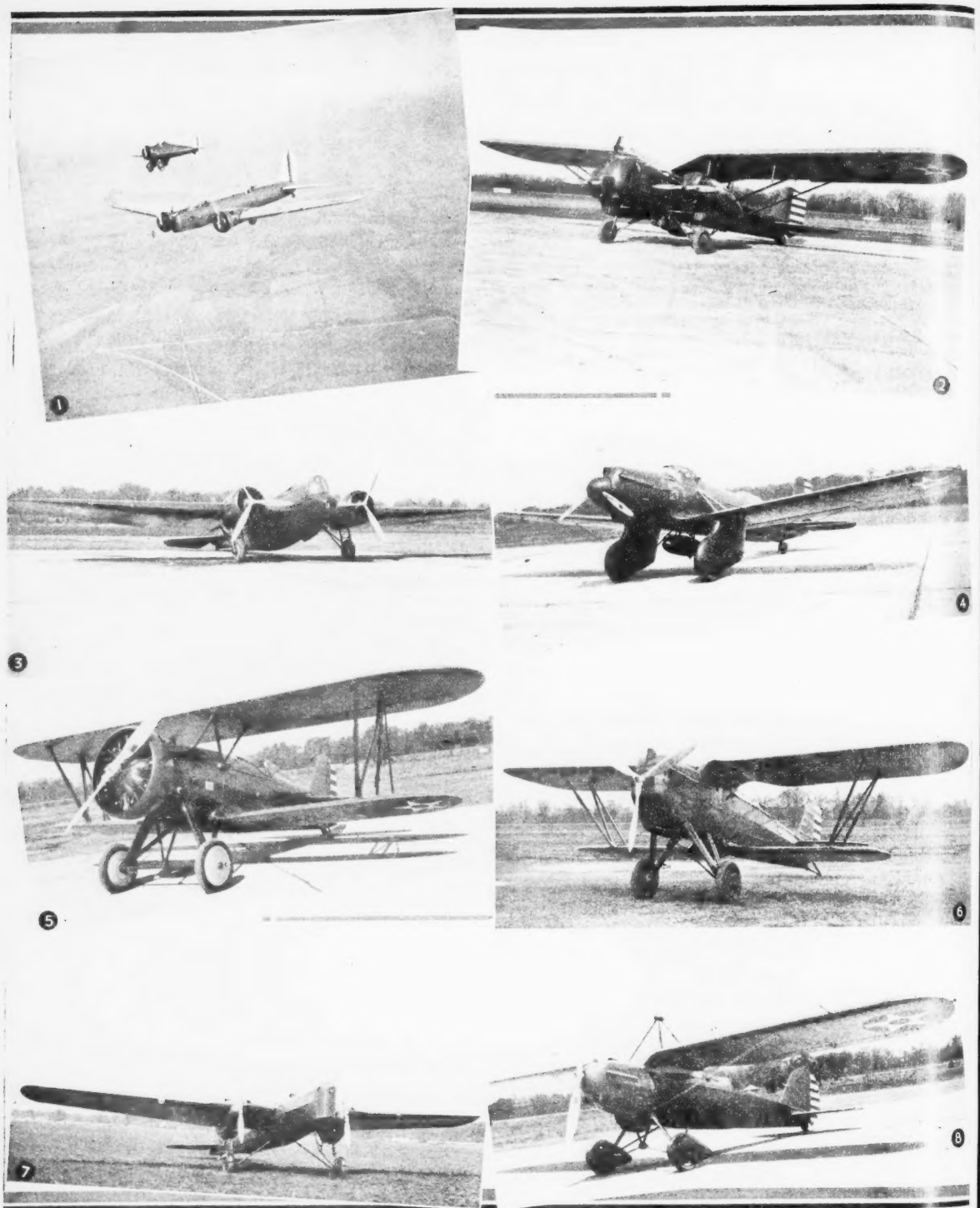


LATEST TYPES OF ARMY AIR CORPS PLANES

1. The B-9, the first of the "super-bombers," threatened the superiority of pursuit types in speed until the P-26 demonstrated the superiority of this type of pursuit plane.

2. The Douglas B-7, Light Bomber. With slight alterations in equipment this ship becomes the O-35, a long range (Army observation) reconnaissance plane. It has retractable landing gear. The gull wing is quite noticeable here.

3. The new Army Martin X B-10 bomber now undergoing test at Wright Field. It is powered with two radial air-cooled engines and has retractable landing gear. The bombs are carried internally in a bomb bay which is closed by a trap.

4. The Curtiss A-8 attack plane. This ship carries light bombs and 6 machine guns 4 pointing forward and 2 aft. The attack plane will be used to first attack AA establishments immediately prior to a bombing raid.

5. Boeing P-12 E. Most Army pursuit squadrons are equipped with this single seater. Speed about 190 m.p.h. at 7000 feet altitude.

6. The Berliner-Joyce two seater pursuit P-16. The upper wing is gull type, the center section being cut away for better visibility. The gunner rides in the rear seat with back to the pilot.

7. General Aviation O-27. Long distance reconnaissance plane. Note the motors faired into the wing.

8. Douglas O-31. A fast corps observation plane. The late Douglas models are gull wing designed.

What a Cavalryman Should Know of the Air

By Major H. A. Flint, Cav., Maxwell Field, Ala.

THIS article is based on the assumption that a cavalryman, like any other ground officer, desires a knowledge of the characteristics and potentialities of aviation which can assist him in carrying out the task assigned to his command. It is hoped to direct the thought of the reader along lines which, strictly speaking, might be termed "Command Functions"; the assignment of a task to an air unit that is within its power to accomplish and the accomplishment of which will materially assist in carrying out the mission of the force whose command is assumed by the reader.

The officer must clearly understand the task of his force and make a clear-cut decision as to how its mission is to be carried out. He should know certain basic facts about the Air Corps and its problems; the characteristics of the various types of aviation; their powers and limitations. Knowing these things, it will be possible for him to determine the profitable employment of the air unit that may be working with his command. Furthermore, he will know how to conduct his own force to minimize effect of hostile aviation.

The converse of this is also true. The better an air element, be it simply an observer or an observation squadron, understands the problems and intentions of the ground force, the more intelligently and profitably it can cooperate. So true is this that the importance of good liaison cannot be overemphasized.

Five fundamental facts concerning aviation should be kept in mind: (1) The speed of an aircraft is greatly superior to that of ground vehicles; (2) It cannot remain in the air continuously; (3) It cannot remain stationary in the air; (4) It can pass over obstacles which would stop a ground force; (5) Areas defiladed from a terrestrial observer are not from an aerial observer, who can also observe deep in enemy territory.

The Air Corps has four tactical branches: Bombardment, Pursuit, Attack, and Observation. The smallest tactical and administrative unit in each of them is the squadron, composed of a headquarters and a certain number of planes. It is commanded by a Major. Bombardment and observation squadrons have 13 airplanes each. Pursuit and attack squadrons have 28 each.

Usually three airplanes maneuvering together are called an "Element." Two or three "Elements" form a "Flight." The entire squadron may be in the air at once in a formation composed of two or more "Flights." The air is a large space, and there is no limit to the number of squadrons that can be there at the same time forming part of a still larger formation, the group, wing, division, or air force.

Three or four squadrons united with a group headquarters, a headquarters squadron, and a service squadron, constitute a group, commanded by a colonel. The headquarters squadron is concerned with administrative details, operations and certain technical matters. The service squadron handles engineering matters, shop and repair trucks, transportation, armament and supply.

Two groups form a wing, under command of a brigadier general.

An AIR FORCE might be defined as a variable unit, but one which in general includes all four classes of tactical aviation and which operates under the command of one man, provided with a suitable staff. It must not be confused with the observation units that are organically a part of an Army or a Corps.

The present tables of organization prescribe only one such force, under the name of the General Headquarters Air Force. It seems reasonable to assume that there would be an air force in each theater of operations.

As a component part of the armed forces of a nation, an air force has for its primary objective the furtherance of the task of the force to which it is assigned or attached. Its energies would be directed against those hostile agencies which were esteemed to be most vital to the success of the nation.

Amongst objectives may be mentioned the disruption of enemy supply, evacuation and replacement systems; the security of corresponding friendly installations; freedom of movement on the ground and in the air for friendly forces and the denial of same to the enemy. No general rule can be given for its employment.

Targets or objectives in order of priority would be chosen by the high command under which the air force was operating and would be those which it was estimated had the greatest influence or value at a definite moment in furthering the mission of the command.

It is not intended to convey the idea that the entire air force takes the air at the same time on the same mission. There might be a situation that would justify such employment, but it is far more probable that a suitable force would be constituted from its units to strike one of the designated objectives and another task force to strike another, etc. Atmospheric conditions, questions of adequate supply of appropriate materiel, etc., might cause deviations from the order of priority established, but it would be followed as closely as practicable.

To sum up: The strategical employment of an Air Force is a function of the Supreme Command, which assigns missions to it. The technical maintenance and the tactical employment of it, similarly to that of any force, along the lines laid down in its directive, is the function of its own immediate commander.

At the Air Corps Tactical School the Blue Air Force is organized as follows:

Blue Air Force:

3d Observation Group.

1st Pursuit Wing (3 groups).

1st Air Division:
1st Bombardment Group.
1st Attack Group.
1st Fighter Group (2 squadrons) (explained later).
1st Observation Group (2 squadrons).
2d Air Division:
2d Bombardment Group.
2d Attack Group.
2d Fighter Group (2 squadrons).
2d Observation Group (2 squadrons).

All groups contain four tactical squadrons (except where otherwise stated), a headquarters squadron and a service squadron. Each air division is thought to be a normal "task force," but from them modifications might be made, appropriate for various tasks.

Bombardment

Bombardment aviation is essentially a weapon for the destruction of vital *material* objectives on land or sea which are beyond the range of artillery.

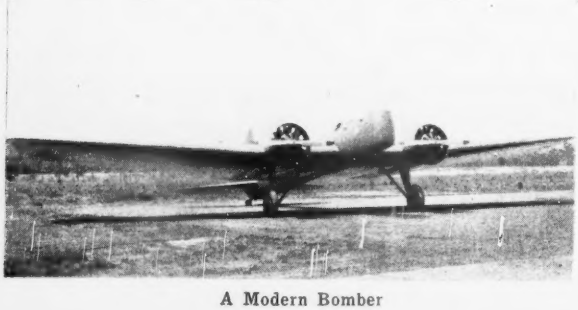
Development of speed and weight carrying ability have eliminated day and night, heavy and light bombers from our service, which uses but one type of bombardment airplane. Its offensive weapon, the bomb, is produced in various types ranging from 100 to 2,000 pounds. Chemical bombs in these weights could be used. Airplanes are capable of carrying up to 2,400 pounds of bombs in various combinations, as one 2,000-lb. bomb; two 1,100-lb. bombs; four 600-lb. bombs; twenty 100-lb. bombs, etc.

At the Air Corps Tactical School in the solution of map problems students use a speed of 175 mph., and a total range of flight of 950 miles.

Missions may be accomplished singly or in flights of three or more airplanes, but for defensive purposes a squadron flies in a close formation which permits of mutual support from the twin machine guns carried in the bow and stern of each airplane, operated by a noncommissioned gunner. For protection and assistance a bombardment formation may or may not be accompanied by pursuit or attack, dependent on many factors: enemy air strength, antiaircraft installations, etc.

Each bombing airplane on taking off on a combat mission has a pilot and a co-pilot for his relief. Both are officers and should be qualified bombers. In addition to the two sergeant gunners spoken of above there is a radio operator.

The "route formation" deploys on signal on arrival at a designated point in the vicinity of the target. The airplanes proceed to their designated target according to a prearranged scheme of maneuver. On approaching the target the best qualified officer descends to the sighting and bomb releasing compartment and at the proper time releases the bombs. After bombs are released the formation reassembles at a designated point and returns home to prepare for another mission.



A Modern Bomber

Pursuit

Pursuit aviation is that branch of the Air Corps which contributes to the establishment and maintenance of control of the air in the field of operations by the destruction of hostile aircraft through offensive air action.

The pursuit airplane is a small single-seater which has a high speed and great maneuverability. Speed is essential to overtake aircraft in flight and to stay with them after having intercepted them on their course. Maneuverability is essential for efficiency in combat. Only a very sturdy airplane can withstand the strain of violent combat evolutions.

Its armament is one .50, and one .30 cal. M.G. synchronized with the propeller and shooting behind its blades in their revolution. The .30 cal. carries 600 rounds in its belt and the .50 about 200. Under certain conditions it may employ fragmentation time-fuze bombs which can be released above aircraft in flight and set to detonate at the elevation of the target.

At the Air Corps Tactical School, a speed of 210 mph with a flight range of 540 miles is used in the solution of map problems.

A two-seater pursuit airplane with a speed slightly superior to that of bombardment airplanes has been developed recently. No methods of tactical employment have been developed, although it is indicated that there is a wide field for defensive employment for special support operations. This is the airplane referred to as a fighter in A.C.T.S. Air Division.

An element of three airplanes is the basic unit of all pursuit formations. Two or three of such elements form a FLIGHT, the smallest tactical unit found in the tables of organization. Three flights form a squadron, commanded by a major.

To accompany an aerial flight to prevent its molestation on the whole or a part of its mission; to clear a certain area of hostile aircraft to permit functioning of friendly observation or to deny it to the enemy; to intercept a hostile aerial flight and destroy or disorganize it to prevent its success, are among the missions that might fall to pursuit.

In the accomplishment of these missions it may be forced to fly from low altitude to 25,000 feet or over. This necessitates either two types of machines or a machine equipped with a supercharger to counteract the rarified air of the upper atmosphere. The latter method is the one used in our service.

Let it be noted that its machine guns are fixed and shoot always in the line of flight. This quality makes offensive action obligatory in combat.

Probably the point of greatest interest to the commander of ground forces is that if the observation

A Modern Single-seater Pursuit Plane

aviation working for him cannot gain access to a certain area on account of hostile aircraft it is to friendly pursuit that he must turn for immediate aid. Conversely, if he wishes to deny observation of a ground operation he will ask for pursuit intervention.

Attack

Attack aviation is that branch of aviation created to attack light materiel and personnel by means of machine gun fire, bombs, and chemicals. It would seem reasonable to envisage its employment against targets that were not subject to artillery fire. However, it is not difficult to visualize a case where its use against targets within artillery range would be justifiable. It would seem to be a question of relative values with respect to success of the forces of the nation at a definite point and time. Its strategical employment will be decided by higher authority and the tactical operation prescribed by its own commander.

Its use was rapidly growing at the end of the World War. Germany was the only nation that had a machine built especially for this task. The other nations converted other types of airplanes to the execution of attack missions. The need of a special machine was clearly indicated. Since the war in our own service there has been developed an "Attack Plane."

In considering it, three points should be kept in mind:

1. What are its powers and characteristics?
2. How can they be best utilized to aid friendly ground troops?
3. What steps can be taken to injure or minimize the action of enemy attack planes?

The present attack airplane of the United States is a two-seater monoplane with auxiliary controls for the gunner. It has a 600 horsepower engine, cooled by prestone. Its speed varies from 196 miles per hour at sea level to 173 at 15,000 feet elevation.

It is armed with 4 fixed 30-caliber, free firing, machine guns that shoot forward parallel to the axis of the plane. They fire at a rate of about 1,200 rounds per minute. When the ship takes off they are armed with 600 rounds each. In addition it has 2 flexible machine guns also of .30 cal. They carry 300 rounds each. The total number of rounds carried is 3,000. It can carry ten fragmentation or chemical bombs internally. These weigh about 30 pounds each. It can carry four 100-lb. demolition bombs externally. It can also carry, though not simultaneously with a bomb load, two chemical tanks of about 30-gallon capacity.

At the Air Corps Tactical School in the solution of map problems, students use a speed of 175 miles per hour with a total range of 300 miles, with full load, or 450 miles when equipped with no bombs and using an auxiliary tank for gasoline.

Its true offensive weapon against personnel or materiel is the bomb. Its forward machine guns are used to cover its approach to drop its bombs. In an ordinary approach they are so sighted that the bullets hit the ground about 1,200 yards ahead of the airplane. It is, of course, possible to fly so that fire can be brought to bear upon objects much closer, and much damage to personnel might be done under certain conditions. The two flexible machine guns are primarily for defense against enemy pursuit planes, though they could be used against targets of personnel on the ground.

Its fragmentation bombs can all be released in a salvo at the same time, although it is taught that their best use is when they are dropped in "trail" or successively along the line of flight. It is possible for the pilot who releases them to have them hit the ground at about 25 yards apart. The normal fuse arms itself by rotation after release of the bomb and explodes on impact. The 100-lb. bombs are prescribed to be dropped from an altitude not closer than 1,000 feet to the ground.

Smoke released from the chemical tanks is more efficacious the closer it is laid to the ground. The effect of smoke, and also of the area that would be covered by chemicals, is largely dependent on the wind velocity and direction at the time. The purpose of smoke, of course, is to cut down vision. Its use to windward of an attack favors approach. Smoke bombs could be dropped on observation posts.

With toxic chemicals that could be carried in the plane, an area 1,500 yards long and 150 or 250 yards in width could be covered densely enough so that all personnel within that area would be casualties. Wind varying from zero to 20 miles per hour represents the probable efficacious limits. The gas coming out of the tanks would be visible behind the airplane, which ought not to be over 200 feet above the ground at the time of release, and would be better at 50 feet. It is quite probable that due to the number of casualties that would take place at these low altitudes from rifle and machine gun fire that the first attack airplanes to come over would use bombs and phosphorus to create demoralization to cover the planes laying gas.

The "trio" is formed of three airplanes that fly together in a close V, and is the smallest tactical unit used by attack. Its offensive power is, of course, three times greater than that of a single airplane, and the defensive power of its mutual supporting rear guns is much greater. The leader controls it by arm signals and previous training of his pilots. Real combat efficiency is obtained by a thorough understanding of the mission and the details of its execution before taking off, coupled with a thorough training of the pilot.

Normally two or three "trios" make up a "flight," which flies in a close V of "trios," with each trio closed up. This facilitates control and offers a strong defense against aerial attack, though the formation would be more vulnerable to antiaircraft fire.

A Modern Attack Airplane

The squadron consists normally, not inflexibly, of two "flights" of three "trios" each. Except when actually assaulting a target, the squadron usually flies in echelon with a few hundred feet distance and interval between "trios."

At the assault the squadron will break up into "flights" that are each assigned an individual target. The "flight" similarly will assign to each "trio" the part it is to play in the assault on its target. The scheme of maneuver should have been clearly understood before taking off on the mission.

In attacking a column on the road, one airplane might cover the line of the road and the other two the right and left flanks.

Attack missions will usually try to approach unobserved and take full value of surprise. The amount of noise has been reduced, and also low flying planes do not seem to be so noticeable from noise as do those flying at medium altitude. This has led to the very low approaches sometimes referred to as "hedge hopping."

Some idea as to the length of time that might intervene before the attack airplanes would be over their objective after becoming visible may be obtained by the rough rule that if the number of miles per hour at which an airplane is flying be increased by fifty per cent it will be approximately the speed in feet per second. Example: an airplane flying at 200 mph. Half of 200 is 100. 200 plus 100 equals 300. This is approximately the distance in feet covered by that airplane in a second.

The question of vulnerability from ground fire is mostly conjectural, but the opinion exists that in flying over regions heavily defended by ground fire the safest altitude is between 1,500 and 2,500 feet. At 1,500 feet the effectiveness of rifle and machine gun fire, cal. 30, is believed to be very little. Similarly, the effect of the .50 cal., is believed to be very low at 2,500. This belief is not based on effectiveness of the bullet, but rather that hits would be rare at those ranges. The antiaircraft gun could inflict damage up to the ceiling at which attack airplanes can fly. If hostile pursuit were present it is believed better to fly lower and thereby muzzle the antiaircraft which would be dangerous to its own pursuit.

At night the best altitude so far as aviation is concerned is about 1,500 feet. If caught in a searchlight of an antiaircraft organization, escape must be made by frequently changing elevation and course. Considering the speed of flight, it is believed impossible to hold a searchlight on an airplane flying erratically at 100 to 200 feet elevation. Antiaircraft and rifle or machine gun fire against an unilluminated target at night is valueless, except as a chance barrage.

Missions which might profitably be given to attack aviation are the attack of a rail center, lines of communication, an enemy airdrome, neutralization of searchlights and antiaircraft guns in support of a bombing operation, attacks against concentration points, movements of reserves or troops on the road, movements of truck trains of supplies, attack of vulnerable ships of a convoy, small boats in a landing operation, reinforcements on the road or in bivouac; and bombing vital targets that due to position on the battlefield are immune to artillery fire.

It should be understood that attack aviation is never sent out to cruise about searching for targets. It should be sent on a definite mission against a proper target, about which G-2 has accurate information. Only one target should be assigned at a time, and this should be one which will most assist the operation of ground troops. Attacks for destruction will be in the nature of a surprise and mass attack. Attacks for neutralization and delay might well be in a series of small and almost continuous threats.

On return from a mission from one or two hours will be required before another can be undertaken, depending on whether gasoline must be taken on in addition to ammunition and bombs. While in theory only two missions can be carried out in one day, or a total of four in two days, it must be admitted that there have been occasions where this has been much exceeded. It all comes down to the concrete case: how great is the emergency? How demoralized is the enemy? If it be at a high cost to us, is it worth it?

As to defensive measures to be taken by troops. Concealment is, of course, the greatest security measure. If nothing is known of them they surely will not be attacked. Air observers should be posted both on the march and during halts. Troops attacked by low-flying airplanes should open and maintain fire. It should be taught that the greatest danger is from bombs and not from bullets. The fire is intended to cover the approach and create demoralization. The time to seek cover is small. Aviators of the last war, who had much battle experience, are insistent that troops should fire first, last and all the time. Much damage may be caused, even though it is not apparent to those that caused it. A hit in the crankcase, oil line, or the cooling system, may force a landing at a distance at which it would not be observed. A wounded pilot might be able to get back over friendly territory, but he is a casualty. Subsequent missions will be more cautiously carried out. Finally, consider that although fragmentation bombs have a very demoralizing effect, the actual damage may be small. Unless one be a direct hit, or close to the spot of the detonation, there is a good chance of his not being hit, especially if he be kneeling, prone, or in a slight depression, such as the ditch beside the road.

Observation

Observation is that branch of military aviation whose primary function is to furnish information to the commander under whom it is operating, concerning any activity in which he may be interested. In the accomplishment of this mission it reconnoiters dispositions and activities of enemy forces at both close and distant ranges. It secures information both for the ground and air forces. It furnishes an artillery airplane which searches for objects suitable for artillery fire and also assists in the adjustment of artillery fire. It furnishes an infantry airplane which, flying at low altitude, reports the progress of friendly troops and the location of the front line. It can locate and report resistances which are slowing up progress of the attack. It takes photographs, both vertical and oblique.

It is organized, as are the other combat air branches, into flights, but this is purely for technical control. Missions are executed by single machines, with or without protection from pursuit.

It forms an organic part of GHQ, Armies and Corps. The exact details may be found in tables of organization, but for the purposes of this article it is sufficient to consider that all have an observation group.

It is universally acknowledged that an infantry division has need of an observation squadron, but at present it has only a division air officer on the staff of the division commander and five enlisted men. The corps will assign a squadron from its group to each of its divisions, retaining one for its own use.

This brings up an interesting question. Is this system better than giving a corps one squadron with the headquarters and services of a group which is capable of absorbing an organic division squadron brought up when the division was assigned to the corps. This insures the division having its own aviation to work for it at all times and does not prevent the corps employing it, if necessary, in the fulfillment of special needs.

This is the system employed in the French Army with its cavalry. Each division and corps has a squadron of cavalry as a part of its reconnaissance group. The corps also has the headquarters and staff of a cavalry regiment which absorbs the squadrons of the incoming divisions. It appears to work satisfactorily for them.

The Germans, while it is purely a paper organization, due to the Versailles Treaty, have an observation squadron organic with each division, and so well do they recognize the importance of aviation working with artillery that their squadron is organized in two parts: the first as an observation unit, and the second as an artillery observation unit, whose observers are artillerymen.

It is understood that England now believes that control of observation squadrons, except in case of a division acting independently, should remain in the corps.

It is believed that a cavalry division has need of an organic air squadron trained to work with cavalry. Often a cavalry division may be attached to a corps which will have too little aviation to give the cavalry that for which it may have need. The nature of the duties that fall to cavalry are such that a cavalry division has more or less an independent status.

It is believed that generally division aviation will operate from the corps airdrome area where it may have its own special airdrome, in the vicinity of which will be found the group service squadron, which assists in its maintenance.

The title of the senior air officer on duty with the Army is the Army Chief of Aviation, who commands all aviation with the Army and who is at the same time the adviser on aviation matters to the Army Commander. Similarly, the corps has its chief of aviation. The Division Air Officer has two functions—one which is strictly staff, and the other is the tactical and technical control over the air unit attached to it from the corps. Although this agrees with Army Regulations it does not agree with the trend of thought in the Air Corps today. We visualize the air officer as a staff officer and not in command of Air Corps troops in addition.

At the Command and General Staff School at Fort Leavenworth it is stated that "the division air officer is a staff officer of the division commander *and tactical commander of all aviation attached to the division.* As such, his duties are the same as those of all other staff officers. He keeps himself fully informed as to situation, both ground and air, and probable action of ground forces.

"He should at all times know and be ready to give full information as to the operating strength, morale, general efficiency, and condition of units comprising division aviation.

"He should be prepared to advise as to what support is being furnished by, or should be requested from, corps, army and GHQ aviation.

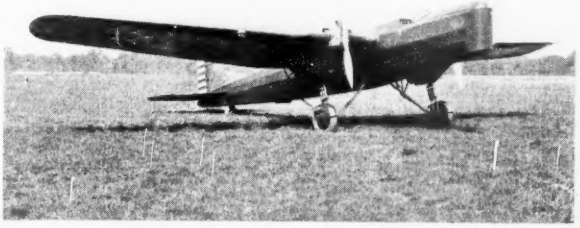
"He is normally located at the forward echelon of the division headquarters.

"He should be available to advise the division commander and staff before important decisions are made and when important orders are issued.

"He should, on short notice, be prepared to submit a plan for the employment of division aviation, and the necessary orders for carrying out this plan.

"He so plans operations that missions will be kept at a minimum consistent with furnishing full cooperation and support to ground units.

"Upon approval by G-2 and G-3 of plans or receipt of orders for the employment of division aviation, he issues the necessary orders.



A Bi-motored Long-range Observation Plane

"He coordinates aviation activities with commanders of subordinate ground units and has liaison officers detailed to principal units in order that aviation may render maximum assistance to these units. (It is suggested for thought that if it be well for the air service to detail a liaison officer to a ground unit, is it not equally important for the ground force to detail a liaison officer to its air unit?).

"When practicable, an advanced landing field, where command and artillery missions are held on the alert, and for other purposes, is located near the division command post.

"The observation squadron airdrome is connected by telephone with the division command post. Airplanes in the air communicate direct to the squadron airdrome, the division command post and the artillery batta'ions by radio and to other units by dropped messages." (It would be possible for an airplane to communicate with a cavalry reconnaissance detachment equipped with a radio adjusted to the same wave length.).

This brings up another point. The Division Air Officer is strictly a staff officer until the corps gives the squadron to a division. Is he really as capable of commanding and stating possibilities of work possible to the reinforcing observation squadron, and supervising its technical control, as the one who has been commanding it? The French say "no." With them the Division Air Officer is a capable aviator but strictly a staff officer who keeps in close touch with the squadron; assists in the maintenance of liaison between it and the division; suggests possibilities for the employment of the observation squadron; conducts reconnaissance for new or auxiliary landing fields, but remains always a staff officer. The commander of the attached air unit is the adviser to the division commander on aviation matters, exactly as our artillery brigade commander is the adviser to the division commander on artillery matters. It is not intended to start a discussion but has been introduced here merely to stimulate thought on command and aviation matters. The great essential is that there be close cooperation between every ground force and its air unit which will lead towards economy of force in its employment.

The requirements of each echelon of command are different. For example, division and corps aircraft rarely find employment more than ten or fifteen miles in advance of a front line division. Army missions may be as far distant from the front lines as 75 miles; possibly in these days of mechanization these distances may be increased. At present a 300-mile radius of action may be considered as the maximum for GHQ observation. It may be noted that the radius of action of observation airplanes is now inferior to that of bombardment airplanes. This will, no doubt, be remedied. A cavalry division working independently might have need of an airplane operating at a distance of 80 miles to its front, this being slightly over the distance which it might march in a day and the distance which the force opposed to it might cover during the day, in which case contact would be possible between them at nightfall.

These different requirements have led to two types of observation planes. One, for the Army, Air Force and GHQ is a two-motored, 3-place machine to carry on distant reconnaissance and mapping. Photographic missions are usually performed from a high altitude. The other machine is a light, fast, single-motored plane carrying only a pilot and an observer.

At the Air Corps Tactical School in the solution of map problems a speed is allowed the GHQ plane of 165 mph, with a total range of 700 miles. The corps and division airplane has a speed of 180 mph, with a total 500-mile range.

The two-motored machine carries two single or twin machine guns in each cockpit, one of which is forward of the pilot and the other behind him. The corps airplane has one fixed gun mounted in the wing which shoots outside the radius of the propeller. This enables a higher rate of fire than if it were synchronized with the propeller. It also has a twin machine gun mounted in the rear cockpit. Since the observation airplane is not expected to fight, except to get home, only 200 rounds is carried in the fixed gun and about 600 rounds in each cockpit for the gun mounted there.

Both airplanes require an airdrome of about the same size—approximately a quarter of a mile of fairly smooth and level ground, with no close obstructions. An airplane equipped with brakes can land on a shorter field than that from which it can "take-off." Both of these observation airplanes land at about 60 or 65 miles per hour in still air. Like the birds, an airplane lands or "takes off" into the wind, for it must attain and maintain a certain minimum speed of air flow past its wings in order to "take off" or remain in flight. For example, an airplane which might land at 60 mph on an absolutely calm day could land with a ground speed of 40 mph if it were landing against a 20 mph wind. The same airplane would have to attain a ground speed of 60 mph to take off in calm air, but 40 mph would suffice in the face of a 20 mph wind.

As regards aerial photography one hears of vertical photographs, "pin points," and oblique photographs. A vertical photograph is one that is made when the plane is flying horizontally and the axis of the camera is perpendicular to the horizontal plane. The outside edges of this photograph will be slightly distorted on account of the obliquity of the light rays to it. However, the central portion will be exact. Mosaics are built up by utilizing the central portion of each print and matching it up with an adjoining print. In this manner a composite photograph can be built up by using successive prints. It is possible to make a photograph of this mosaic and reproduce it to any desired scale. A "pin point" is a single photograph taken directly over a definite point on the ground.

The camera taking vertical photographs operates through an aperture in the floor of the airplane. The vertical camera at present in use in our service has a 12" focal length and takes a picture 7 x 9 inches. At 10,000 feet this exposure would include an area on the ground 1-1/10 miles deep and 1-4/10 miles wide. Used in connection with this camera is an electrically operated instrument known as an intervalometer which

automatically exposes the film, winds it for the next exposure, regulates the interval between photographs, and allows for 30 per cent. overlap of photographs. The entire instrument and mount weigh about 90 pounds. In the 3-seater airplane first spoken of, it is carried in the forward cockpit. In the 2-seater machine it is mounted in the rear cockpit and operated by the observer, who faces to the rear and can at the same time observe for hostile airplanes.

The oblique photograph is taken by a camera which has a 20" focal length and takes a picture 7 x 9 inches. The camera weighs 60 pounds and is operated over the side of the ship at an angle of about 30 degrees to the horizontal. This photograph shows relief of a definite feature, such as a building, bridge, or special terrain feature, which is capable of being easily understood by anyone and is valuable for the detail which it furnishes. A new camera weighing only 25 pounds and taking a picture 5 x 7 inches is being developed for use in taking oblique photographs.

There is also a multi-lens camera of three, four or five lenses which is used in high altitude photography for mapping. It takes in about 60 times as much ground as a single lens camera being operated at the same altitude. It is capable of about 84 square miles at 10,000 feet altitude.

Night photography is still in the development stage, although considerable progress has been made. By means of a very sensitive attachment to the lens, the film is automatically exposed at the sudden light of a flashlight bomb which can be dropped and which will explode after having fallen a certain distance.

Observation airplanes are equipped with a standard radio telephone telegraph set, which has a radius of about 30 miles by telephone, and 100 to 200 miles by telegraph. At this time it must be admitted that the radio telephone is not dependable. The receiving and sending set, carried in the forward cockpit of the 3-seater airplanes and in the rear cockpit of the two-seaters, weighs about 150 pounds. The number of missions that might be in the air at the same time and which are expected to report constantly are many in the solution of map problems where it is known that the radio is always perfect. Consideration of the number of wave lengths available creates a little dubiousness as to the amount of this work that will be carried on in any later war. This is the present state of radio communications. Its limitations are known. Development work has been initiated which it is hoped will fully meet the needs of liaison between the Air Corps and the ground force with which it may be working.

Auxiliary methods of communication with an airplane in the air are by a preconceived code of various combinations of colored lights, the display of panels according to a prearranged code, the use of smoke candles. The airplane can communicate with the ground by dropped messages and by certain maneuvers of the airplane which have been agreed upon in advance. By taking advantage of a small cleared space, written messages can be picked up by the airplane.

Communication between the observer and pilot can be carried on by means of an interphone installation.

In addition to the equipment spoken of above, there are flares for night observation which illuminate about a square mile of ground from 3,000 feet. There are also map cases, drop message bags, observers' message pad, auxiliary controls for use of the observer in emergency, pencils, and control maps.

From the point of view of command the employment of observation aviation is simple. The commander should know its capability so that he can give it a task which is within its power. Strangely enough, instances are known where aviation serving with a large force during maneuvers was given little to do because it was not realized what could be done by it. Only the commander knows the information of which he has need in order to carry out his mission. He has then only to send out an airplane to obtain it for him, if possible, either visually or photographically. However, it should be sent out on a definite mission; to go to a precisely designated place or well defined area and search for such and such information. It should not be sent out over an area 100 miles square and told to "reconnoiter for the enemy".

The observer should be kept accurately and completely informed of the situation and the intentions of the commander. Knowing these things he can proceed to the area designated, observe not only there for the definite information desired, but on the way to and from, for any indications which may have value to the commander by revealing the intent or possibility of maneuver of the enemy. The absolute necessity for close liaison between the aviation unit and the command for which it is working cannot be stressed too often or too emphatically. The observer should know clearly the mission of the command and how it is intended to be carried out. The ground force commander should tell the observer definitely what information is desired and the hour at which it must be available at its destination. In addition to the definite information requested, the high commander should receive much supplemental information of great value, which would not have been reported, had not the observer clearly understood the maneuver contemplated and its needs.

Stopping an Apache Battle

An Episode of the Indian Wars

*By George O. Eaton**

Revised and Edited by 1st Lieutenant Don Russell, 342nd Infantry

Foreword

By the late General Charles King, formerly Captain, 5th Cavalry.

THE Civil War gave the Indians opportunity of which the Sioux in Minnesota and the Apaches in Arizona were quick to take advantage with direful result to the settler and emigrant. Deprived of their protectors, "the regulars", for whom there was even greater need "at the front", these unfortunate people, men, women and children, were butchered by the dozen, but after some months of terror the Sioux were rounded up by General Alfred Sully and their leaders hanged. There was no one to round up the Apaches.

Not until six years after Appomattox was the leader found who could master "the monarch of the mountains." Then President Grant took a step that was new to the army. The lieutenant colonel of the 23d Infantry, left to his own devices, had turned the tables on the savages of northern California, of Oregon and Washington. Six years previous he had been commanding a division under Grant's eye in Virginia. Now, as commander-in-chief, the President saw his opportunity. Over the head of every colonel in the army George Crook was made brigadier general and sent to Arizona to tackle the Apache.

That was in the autumn of 1871 and by the time the West Point class of 1873 was graduated there seemed nothing for them to do in Arizona. In the good-natured chaff and banter indulged in, when "the youngsters" first join, not a little fun did the officers of the 5th Cavalry have over the disappointment supposed to be felt by the late arrivals.

All the same there was sharp work ahead that tried the mettle of many a man of their number—work that Crook himself had occasion to watch with keen interest if not anxiety.

And just as luck would have it, late in the fall of 1874 when only two troops of the 5th Cavalry were left at Camp Verde, northernmost of the Arizona garrisons, from the Agency, twenty miles up the valley, came astonishing news. A band of Tonto Apaches, most dreaded of the few "hostiles" still out on the Black Mesa, had dared to venture far to the northwest of their usual haunts—tempted by the arrival of a big herd of beef cattle—had swooped down from the Red Rock country and driven off every blessed steer of the entire "outfit." The agent was in despair, the commanding officer at the fort in a rage. "What would Crook say to that?"

Almost all the officers and men were scouting far to the south, but at all hazards those cattle had to be recovered, even if his adjutant and commissary had to get after them. And, to make a long story short, adjutant and commissary were prompt to tender their services—and just after dark with some twenty troopers and as many Apache Yuma scouts had slipped away up Beaver Creek. Hiding by day and climbing by night, this detachment actually overhauled the cattle at Snow Lake† while the captors fled eastward to Sunset Pass.

Sending the herd back under guard, the two officers with fifteen troopers pursued, under instructions to punish, if possible. The Apache Yuma scouts protested, "No Tonto! No Tonto!" in mortal dread of their born enemies. The officer persisted and, on Sunday morning following, far up the mountain side, fought it out with the Tontos, and nothing but the superb and skillful handling of the reserves by the junior lieutenant saved the life of his commander who, far to the front, had received a bullet in his saber arm. That was the story that brought George Crook all the way down from Prescott to say a word of comfort and commendation to the sorely wounded senior, but more especially, as it turned out, to take stock, as it were, of the tall, silent subaltern whose soldierly skill, bravery and devotion were all that had stood between his comrade and a miserable death.

For Crook had a problem before him that he little liked, and he needed a man of rare nerve, and courage, and judgment to solve it.

Against his advice, against his pleading, the Indian bureau had determined to move in one body three bitterly hostile tribes from their former abiding places under the eyes of a competent agent, far to the southeast—leaving to Crook only positive orders and the details of a most hazardous undertaking. That it was actually carried out was again due to the officer whom he finally selected—the same tall silent young subaltern, the unmentioned—save by his crippled commander and a handful of admiring associates—the unrewarded hero of the desperate fight at Sunset Pass.

* George Oscar Eaton was born at Warren, Maine, May 14, 1848. During the last year of the Civil War he served in the 15th Maine Volunteer Infantry. He was appointed to West Point by James G. Blaine in 1869, was graduated in 1873 and commissioned a second lieutenant, Fifth Cavalry. He became first lieutenant May 1, 1879, and resigned March 29, 1883. Subsequently he studied at the Columbia College School of Mines, Territory of Montana; was a member of the first and second constitutional conventions of that territory, and was appointed surveyor-general of Montana in 1889, holding that position more than five years. In 1894 he removed to New York city and for several years was engaged in mining operations in Mexico. In 1910 he was appointed by Mayor Gaynor one of four members of the Municipal Explosive Commission of New York, retaining that position until the commission was abolished in 1914. He removed to Florida in 1927, where he died, at Fort Myers, September 12, 1930.

† Not to be confused with a later engagement at Snow Lake in which Lieutenant Eaton led detachments of the same troops, A and K of the 5th Cavalry, against the Apaches, Nov. 25, 1871. The fight at Sunset Pass took Place Nov. 1, 1874.

For by the time it was accomplished, Crook had been summoned to another command, and for long years Arizona knew him no more. Not until a half century had passed away, moved by the incessant urging of his few surviving comrades, among them the life-long friend whose life he had saved—my humble self—was George Eaton of the old 5th Cavalry induced to place his story in hands more accustomed to wielding the pen. Told at the time it could have been rewarded with nothing short of the Medal of Honor.

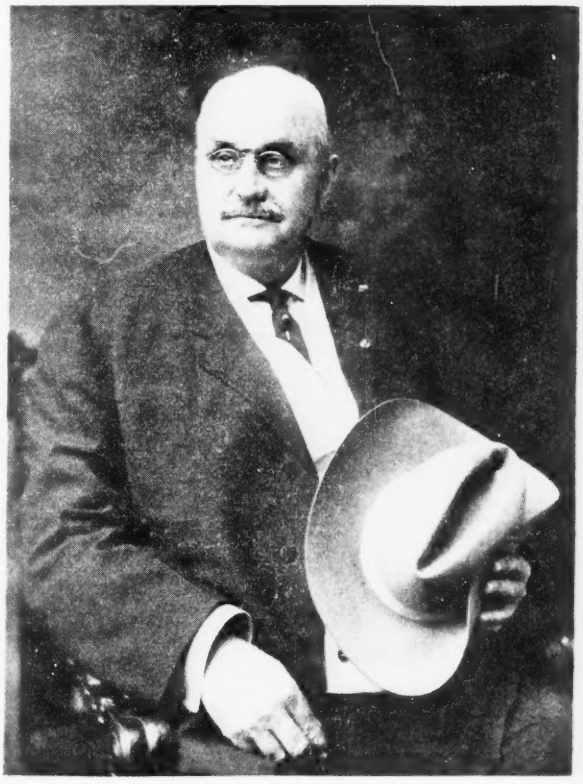
INDIANS were Indians wherever met, but I think most veterans of the Indian wars who had contact with them will concede that the Apaches were the worst. They killed wantonly and tortured ingeniously and fiendishly. As trailers they were most adept. A faint trace, hardly visible to a white man, would tell them from what tribe the moccasins were that had made the track, and how long it had been since the track was made. Their ability to follow such a trail at night was almost incredible.

They were formidable foes. They fought as individuals, but in concert, never accepting a fight unless the advantage was with them, except in rare instances when cornered, and usually confining their activities to surprise raids from which they retreated to the mountains where horse could not follow, nor soldier on foot keep up.

When they could find no one else to fight, they fought among themselves. Stepping into the midst of one of these internecine battles might seem the height of folly. The role of the peacemaker in the quarrel of husband and wife traditionally is not a happy one. When the missiles are bullets instead of flatirons and rolling pins, the danger is vastly multiplied. Yet, in the instance I am about to relate, it became my duty to so interfere in a bloody battle of Apache sub-tribes.

The Apaches, in their arrogant manner, believed that they were the only people on earth, with the exception of the tribes they had met and driven out of Arizona. The few white settlers who came to this mostly arid country they believed to be members of some outside band that was of no consequence, numerically or otherwise. In the years following the Civil War, when there was a great wave of emigration to all parts of the West, a few white men learned of the great value of Arizona land when irrigated. This was before the discovery of the rich mineral wealth of the region. Against the advice of army men they began streaming into the territory and settled along the streams emerging from the mountains. The mountains, particularly the Mogollon range, were the peculiar preserves of the Apaches.

These settlements were few and scattered, and the Apaches made no difficulty of wiping out most of them, their surprise attacks usually being accompanied by fiendish atrocities. Determined to stop this, the Indian bureau at Washington assigned large reservations to the Indians, and the army was ordered to herd them into these tracts. The first few contacts gave the Apaches little respect for the soldiers. The situation



George O. Eaton

became so bad that a shake-up was ordered. General George Crook, who had won some success in the fights against the Modocs in the Lava Beds of the extreme Northwest and who later won a wider fame in the Sioux campaign of 1876, was ordered to take charge.

Crook fought the Apaches in their own way. In this particular field, at least, he was responsible for the adoption of the skirmish formations that have proved their value in all our wars since that time. The wide-brimmed hat, similar to the present field service hat, replaced the sloped forage cap of the Civil War uniform, the cartridge box was replaced by the canvas belt stuck full of ammunition, and officers discarded their swords in favor of the private's rifle. Officers who could not get away from the line-of-battle formations that had been prescribed in Casey's Tactics found themselves detached "on special duty" and younger men, often second lieutenants, found themselves commanding companies.

Pack-mules replaced baggage wagons, tentage and forage for the animals were left behind, the blacksmith fitted extra shoes for all animals before leaving barracks, and everything was kept constantly prepared, so that a command could be moved out without any preliminary bustle and activity.

Night marches and surprise attacks so harassed and discouraged the hitherto insolent Apaches that soon they consented to come into the reservations and have their noses counted each morning. Of course a few of them wandered off, but General Crook and his subordinates so impressed upon them that those who did

would be hunted down like dogs and given no chance to surrender and try it again, that few did so.

One of the largest and finest of Apache reservations in Arizona in the '70s was that known as the Verde Indian reservation in northern Arizona. The Verde River ran through its entire length, and its valley was rich and fertile. A few miles below the Indian Agent's office was the military post of Camp Verde, while forty miles due west was department headquarters at Whipple Barracks, three miles from Prescott.

Three sub-tribes of the Apaches were assigned to this reservation. Curiously, the Apaches had little internal solidarity, despite the fact that they usually were united in the face of an invasion. There were twenty or more sub-tribes, some so closely akin that they spoke a common language or one very similar, but others that were hostile to one, or more, or possibly all the rest, speaking a language unintelligible perhaps to their enemies.

The three sub-tribes assigned to the Verde reservation illustrated this peculiarity. The Apache Yumas and the Apache Mojaves spoke the same language and were entirely friendly to each other. The Apache Tontos spoke a language scarcely intelligible to the other two tribes and had a blood feud against all other sub-tribes, by whom they were much dreaded.

The Indian bureau having projected this "happy family" arrangement, the army had to make the best of it, so the Tontos were herded to a far corner of the reservation, and the Yumas and Mojaves assigned separate camps in some proximity to each other, but with a rigid ban against any visiting between the Tontos and their hereditary enemies.

All three tribes were thoroughly cowed for the moment, and quite tractable. A few Tonto bucks, with their squaws and papooses, occasionally "jumped" the reservation and returned to their forays on the settlers, but their days of freedom usually were not long.

A small detachment of soldiers of the Fifth Cavalry from Camp Verde was stationed at the Indian Agent's office to guard the supplies stored there. A full weekly ration was issued every Friday to each head of a family for every member thereof, a baby born the day before getting the same amount as a full grown man. Large supplies were kept on hand in those days before railroads when it took many months to replenish them, for it would never do to have a shortage on an issue day, not if the Indians were to be kept on the reservation. General George Crook the Department Commander was very insistent that every promise made to an Indian should be kept, and for this reason the stores were carefully guarded by the military and carefully rationed by the Indian Agent, who was a civilian employee of the Department of the Interior.

In the spring of 1875 the Indian Agent at Verde reservation was recalled, and, pending the appointment and arrival of a successor from the east, Captain Walter S. Schuyler (late Brigadier General retired) of the 5th Cavalry was appointed acting Indian Agent at the request of the Interior Department. Shortly he was promoted and necessarily relieved from this position, and I was appointed in his stead. I had full charge of the reservation, though only a second lieutenant shortly out of West Point, including the command of a body of eighty picked Indian scouts, nominally organized as a company of dismounted cavalry, the Apaches making very little use of horses. These scouts while on the reservation lived with their people, being distinguished by wearing a large medal of which they were very proud.

There were some very bad Indians confined in the guard house at Camp Verde, but on the reservation all was peace and quiet toward the last of April and beginning of May. A large area had been plowed and planted with garden seeds, a great novelty to these Indians who rarely practised agriculture. So great was their interest and curiosity when, under irrigation, a few sprouts began to come up, that a few of the braves were persuaded to help in the work, although most of them preferred to leave the labor to the squaws, who had been taught the use of the hoe by a few white men employed in making the experiment. This was the opening wedge of their awakening to labor and its rewards, although unknown to us they were never to see the harvest. Twenty or more years later hundreds of Apaches from this same reservation did wonderfully good work in the construction of Roosevelt Dam, far to the south.

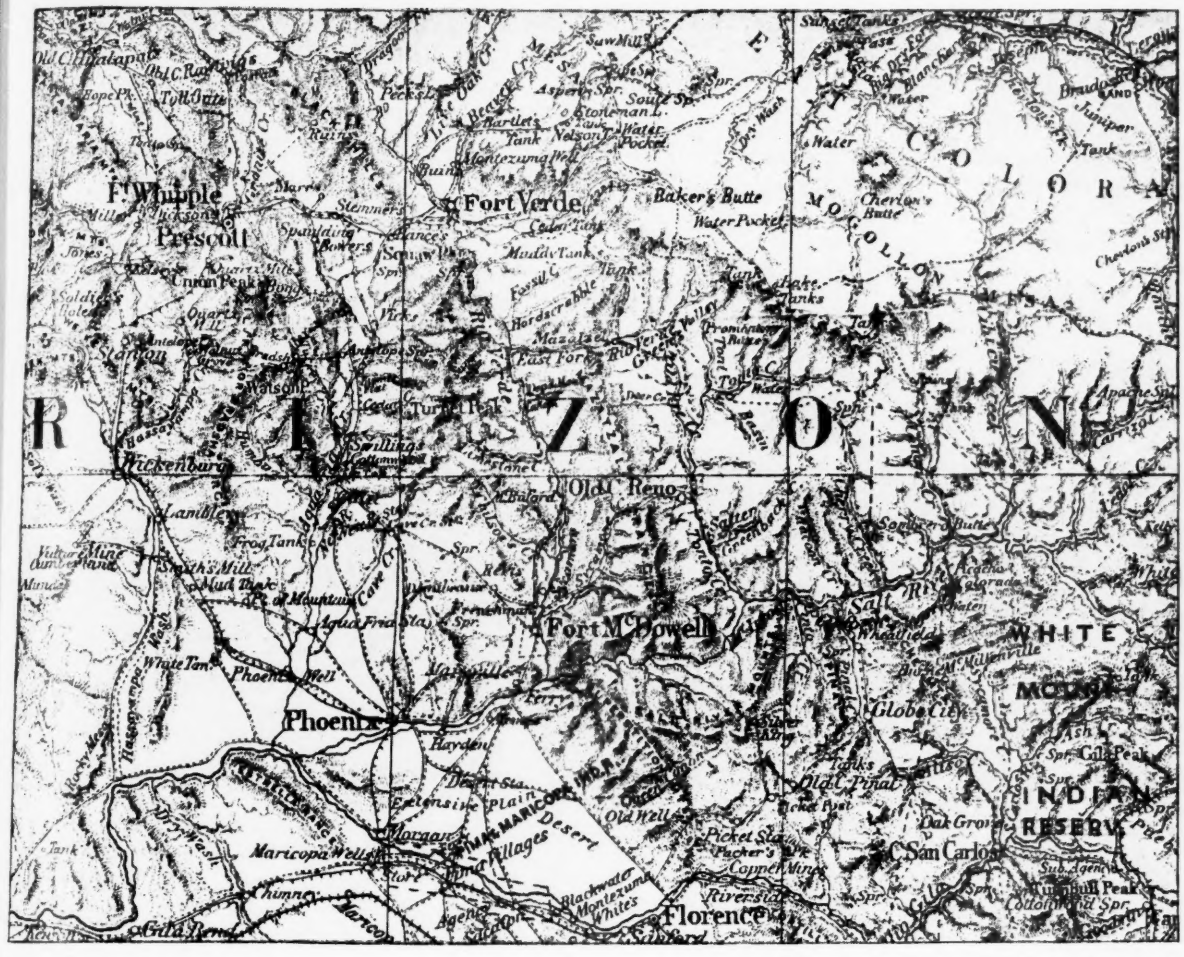
But while the Indians were showing the first stirrings of interest in the almost daily changes in their great garden, I received orders to report to General Crook at department headquarters. He informed me that he had been ordered to transfer all the Indians then on the Verde reservation to the San Carlos reservation on the Gila River in Central Arizona.

The San Carlos Indians were already located on that reservation, which was reputed arid, dusty and unhealthy. The Gila River, on which it bordered, was a synonym, in Arizona, for torrid heat. It seemed nothing short of a crime to move the Verde Indians from their beautiful, temperate and fertile reservation to that simmering desolation. It meant the transfer on foot of thousands, including the aged and infirm of both sexes and mothers with their babies in arms, some one hundred and fifty miles as a bird could fly, and a far greater distance to be actually traveled in large part across mountains, and all of it over bad foot trails, with uncertain water supplies sometimes requiring long marches.

The general said he could send a large military escort but thought it best to avoid any appearance of force lest their medicine men, always trouble makers, should tell them that they were being taken into the mountains to be killed off. He added.

"I have decided to place you in charge of moving them. You know the Indians, and they all know you, and so far as I can tell, believe in you."

He then told me that he would give no detailed instructions but would allow me to use my own judgment in carrying out the order, and that the commanding officer at Camp Verde would honor all my requisitions in outfitting for the trip, and that anything he did not have would be sent from headquarters.



Office of the Chief of Engineers, U.S.A., 1879

He then asked how soon I could fit up and start, to which I said "approximately two weeks," but to carry provisions for so many people and the standard supplies on hand as surplus, would perhaps require six pack trains, but I could not tell that off hand. He nodded and said,

"How many cavalrymen and people will you need, having in mind my desire as stated to avoid a big show of force, but you shall have as many as you think proper?"

That was putting it up to me pretty fast without much time for reflection, but after a few minutes' thought I said,

"I would like a doctor, an interpreter for the Tontos, could get along without an interpreter for the Yumas and Mojaves, and, to protect the large amount of stores and government property en route, a sergeant, two corporals, and twenty privates but I would like the privilege of selecting the enlisted men individually from Company "A" and "K" of the Fifth Cavalry."

The general smiled and said, "That shall be so ordered" and seemed quite relieved at the modesty of my requirements. He said that an official of the Indian bureau would go with me as inspector for the bureau to see that the transfer was duly made and later report the details thereof, but that he would have no authority and would be present simply as an observer, although I would of course provide him with food and sleeping accommodations on the march. The full responsibility would be on me until I got a receipt for the Indians from the San Carlos Indian agent.

There were a few more words from the General in the way of caution and about the trails and water. Without much sleep I rode back to the reservation in the very early morning with plans fairly well outlined in my mind, but with two weeks' hard work and worry ahead of me, not the least of which being to get the Indians of the three tribes in a receptive mood for the change.

However, with the passing of the two weeks I was ready to move out with my motley and picturesque outfit. Meanwhile the official from Washington had arrived and, although having no practical knowledge of Indians, he proved to be a sensible, companionable gentleman, not in any way presuming or fussy, and we hitched together famously.

We had in litters a few infirm Indians who could neither walk nor ride and a few spare horses for those less afflicted. Every day we unloaded mules, as their

packs of provisions were eaten, and there were always old or sick Indians, male and female, to be mounted on them as fast as they became available. The cavalcade, traveling as it must in single file and with frequent rests to enable the old and lame to catch up, strung out four miles or more in length.

I put the Tontos first, with a few mounted cavalrymen to keep them closed up and to separate them by a short distance from the Mojaves and Yumas, who followed. At the very end were a few more soldiers and a corporal to see that no stragglers were left behind and that all finally got into camp for the night. The doctor was all up and down the line as his services were required. My own place ordinarily was in the lead, but like the doctor, my services were often required in all parts of the column, so for much of the time the sergeant was leader.

Fortunately it was a dry season, but the heat was rather intense. Because of the rapid evaporation of perspiration, it was difficult for individuals to carry enough water for the longer marches. A few camps had to be made where water was scant for so many people and animals.

After a few days on the march, when the novelty had worn off, the Indians began to be irritable and captious. My business and that of my men was to smooth over and try to talk the Indians into good humor over petty grievances, but the situation soon began to cause some worry. Even the children, perhaps taking the cue from their elders, began to be cross and troublesome.

Added to this the number of the Indians were increasing, and in a manner that was an added burden. Almost every day a prospective Indian mother would drop out of the line of march and retire to some shelter. The doctor would be sent for, if he could be reached, but it was not infrequent that the commanding officer was compelled to officiate. However, the Indian women required little help in such an emergency, but occasionally a mother would attempt to sneak away and abandon her new born babe. In this case I would have an unloaded mule brought up, load mother and papoose thereon and put them in the procession. Long before night mother love would come to them, and invariably they would go into camp as fond of the child as could possibly be desired.

But the routine of the march, relieved by such incidents, was rudely interrupted.

I do not recall how many days we had been on the road, but perhaps not more than twelve or fourteen, when after a moderately short day's march, we came to the East Verde branch of the Verde River just where it emerged from the mountains into its own little valley with quite steep hills on each side. With water and grass in abundance and dry wood nearby it made an ideal camping ground, so we decided to go no farther but rest for the afternoon there.

As the stream debouched from the foothills it ran close to quickly rising ground. The valley, therefore, lay wholly on the other side, narrowing as one went upstream to a point at the foothills. I placed the supplies and then the horses and pack trains near this enclosed neck where the animals could be stampeded in only one direction, downstream. I made my own camp next down the creek in a recessed spot of level ground large enough for my little group. Next below, perhaps a hundred yards down, I placed the camp of the Tontos, and below them with an interval between, the Mojaves and Yumas, encamped, as usual, together. At the lowest camp the valley was of considerable width.

After dinner we settled for a quiet afternoon, but the half-grown boys of all three tribes began playing games on vacant ground between the two Indian camps, maintaining the tribal separation. In course of time, as boys everywhere so divided would, they began to shout at and ridicule each other. Soon the words became intensified in number and character with corresponding excitement among the boys, until, in imitation of what they had heard from their elders, the little rascals formed themselves in two opposing lines, facing each other and extending at right angles from the branch toward the nearby foothills.

They stretched themselves out on their stomachs, seeking cover, in true Indian style, from any grass, stunted shrub, or inequality of the ground, just as though they were armed, which they were not except with their tongues. These they kept wagging incessantly, the vocal volley increasing in the intensity of shrill voices until a few unarmed buck Indians began to stray here and there from their respective camps and join their respective children. The numbers of these increased until there were more adult Indians in each line, all lying down and seeking cover, than there were boys. However, they also confined themselves to hurling verbal insults but were getting more and more excited over this outlet to their years of repressed hatred.

Meanwhile the squaws of both camps, in a common sense of fear, began to gather on the steeply sloping hillside directly overlooking the disputants in the valley below, and curiously they seemed to show no desire to take up the quarrel but mingled irrespective of tribe in a common concern over the consequences.

Suddenly there came a sort of verbal explosion in the two lines below them with the result that all the young men, as of one accord, made a rush for their respective camps, armed themselves and returned to the scene of the dispute. The heated verbal exchange, however, was resumed, but a single shot seemed a signal to set things off; a volley from both sides was followed by continuous shooting. Pandemonium seemed to break loose, as added to the shots and shouts of the warriors were the moans and shrieks of the squaws, who, as in balcony seats at a theater, were looking down and seeing their husbands and sons killed and wounded. To them it seemed a fight to the finish, and they well knew that their fate depended upon the outcome.

The Tontos were the best warriors individually, but they were outnumbered by the other two tribes. The Mojaves and Yumas began slowly crawling forward with the result that the Tontos were being forced back toward my camp. At the beginning of the fight, however, in the fairly broad part of the valley, neither

my camp nor that of the horses and mules, which I could have ordered in at the first sign of trouble, were in any danger, as all of the bullets fired upstream passed harmlessly by to one side and were buried in the hills that lined the valley.

However, as the Tontos continued their slow retreat, it was obvious that eventually the animals would come directly in the line of fire of the Mojaves and Yumas. As the course of the stream began to push the flanks closer and closer to the hills—at first the lines did not reach so far—the bullets began to come closer and closer to the herds. Already the animals were becoming restless and alarmed, and if once shot into nothing could avert a stampede and disaster for the entire party.

Meanwhile frenzy reigned. Excited squaws braved chance bullets to come down the hill and drag away the dead or wounded. Because of scarcity of ammunition the firing was not rapid, but for the same reason it was deadly. Ammunition was so scarce among these tribes that it was little used in hunting but was carefully husbanded for war. Most of the dead later were found to have been shot through the head. Nevertheless, there was plenty of shooting as each warrior maneuvered for favorable position and fired whenever he was reasonably sure of hitting.

This was a fine situation to face a second lieutenant not yet two years out of West Point! But it was not entirely unexpected. Knowing of the long feud between these tribes I had asked General Crook just before we parted:

"Supposing that somewhere on the trip to San Carlos the Indians for any reason get to doing real fighting among themselves, what are my instructions?" He dropped his head a moment and then said slowly and reflectively, "Well, if they want to fight wholly among themselves when we are doing our very best for them, then let them fight, but if it comes to a point where government property and the safety of your command are endangered, you will of course stop it if you can."

This point had been reached.

For some days I had sensed the impending possibility of trouble. I did not know just when it would happen or what form it would take but I had done some serious thinking.

Back on the reservation the chiefs of the three subtribes had each sought to ingratiate themselves into my good graces. Each had tried to get me to give some outstanding evidence to other Indians that I was exceptionally fond of himself and his tribe. This of course would exalt both him and his tribe above the other chiefs and tribes.

But this I had been most careful to avoid. If I had so chosen it would have been "Charlie," chief of the Mojaves, but I never in any way gave any of the three any intimation that he was preferred above the other two. As a result each believed himself to be the chosen friend, but yet was not sure which side I might take in an emergency.

This was what I based my plan on. I first ordered Harry Hawes, the chief packer, to take charge with his armed civilians, try to keep the herd out of the line of fire and do the best he could with them. I could spare no soldiers as guards.

I had twenty-three well armed soldiers, the doctor, the interpreter, the inspector from Washington, and myself. I sallied out with this little command in single file. I held my Henry (Winchester) rifle in the hollow of the left arm with the right hand grasping the small of the stock, forefinger in the trigger guard. All the enlisted men did likewise. I had intended to post the doctor next but, as we marched out, I noticed that the inspector was directly behind me, and as close as he could well get. This did not matter; the doctor was next, then the interpreter, sergeant and privates, with the two corporals bringing up the rear.

We followed the valley close to the base of the hills for a hundred feet or so, passing by the flank of the Tonto firing line, until we reached a point half way between the flanks of the shooting zone, but as yet entirely out of its deadly crossfire.

From this point I turned squarely to the left and with my right hand uplifted marched straight down into and then along the center line of the fire-swept zone, my men following me in the order indicated.

The Indians might have kept on fighting—in which case I should not have attained to the age of 82.

But this was the chance I took. As the Indians at that end of the battle line saw my little force, the question inevitably came to each, did I come as friend or foe? If friend the addition of my little band, each man carrying forty rounds of ammunition, each known as a trained marksman adept in the method of fighting then being used, was not to be despised. If a shot was fired, it was natural to suppose that I would immediately align myself with the opposite force. Thus thinking, each held his fire.

The prompt desire of each was to learn with whom I came to cast my lot. As I moved down the center, still with arm upraised, firing on both sides slackened, and we had not gone farther than one-third of the distance down the line when firing ceased altogether, but the Indians still lay in position.

I did not give them an opportunity to think any further about it but immediately halted my command and through the interpreter said that I must talk with all three chiefs in a group and asked them to come where I stood. They objected, being not willing to come out in the open. With a bit more parleying they finally agreed that if all came at once, they would approach. They came slowly, and with much hesitation, each looking to see if the other two were advancing, but finally the three, angry and scowling, but without war paint, came near enough to hear what I had to say.

I told them that there had been much useless killing, and that I wished each chief immediately to withdraw his tribe to the camp to which it had been assigned; that as soon as everything was quiet I would send soldiers to guard them while they sent parties out to bring in their dead whom they could bury as they pleased and that I would have all the wounded brought together to be treated by the doctor.

They did not like this, of course, but I said I was

the friend of all of them and wanted to continue to be so; that, if they continued fighting until one side was entirely wiped out, they knew the "Gray Fox" (General Crook) and the Great Father at Washington would be very angry with them, and that the payment of a life for a life would be demanded. I promised them that, if they now did as I said, I would see that they would be forgiven and not have any more punishment than they had already received.

All this took time, as the interpreter had to make all parties understand. The first to give signs of yielding was Mojave Charlie, and at this I began to feel that I was going to win out, but just then something happened that seemed for a moment hopelessly to end everything.

As the conference continued, curiosity caused several of the Indians to arise and approach part of the way toward us. One I noticed more adventurous than the rest, who stood very near us. He came from the Mojave-Yuma line and was the handsomest, most manly Indian I had ever seen, perhaps in his early twenties, naked except for a fillet to keep the hair out of his eyes, breech-clout and moccasins, moderately tall and finely formed, with a pleasing cast of countenance and a copper-colored skin that shone in the sunlight like a fine piece of bronze.

As he stood there, leaning slightly forward with rifle in hand and showing every sense alert in trying to hear our conversation, and just as Charlie had indicated that he would be willing to act in concert with the other chiefs and withdraw his people, there came a single shot. The listening Indian leaped upward with a yell and fell to earth in his death struggle.

I surely thought everything was lost, but I put up my right hand again, palm outward, and no shots followed. After much persuasion the conference was resumed with the dead Indian still lying nearby.

It was only after the chief of the Tontos was told that he would have my own force against him, allied with the Mojaves and Yumas, if he did not agree, that he yielded, but shortly thereafter all three tribes were returned to their original camps. The dead were collected, and the wounded brought to the shade of a spreading tree, where the doctor was busy the rest of the afternoon and nearly all night.

Every one of my command had behaved splendidly, but a special word of commendation is due the inspector from Washington. He found himself in a trying situation with which he was not in the least familiar. He scarcely knew what we were trying to do, yet he never hesitated in following us and in doing his best to assist us. Yet he caused me the greatest scare of the entire afternoon.

When preparing for his trip, he had thought it necessary to arm himself, and his idea of proper armament was two old-fashioned, fifty caliber, double-barreled Derringer pistols that would blow a hole in a man as big as two fingers. When I found him directly behind me on the march I observed that he was carrying these Derringers at full cock, with fingers on the triggers, forearms extended and elbows pressed close by his side, which brought the muzzles of both these small cannon almost against the small of my back. Under these conditions, if an Indian bullet, stray or otherwise, should hit him the convulsive movement of his trigger fingers would result in blowing two sizable holes through me.

I had too many other matters to think about even to expostulate with him in gentle manner but I do admit I went through the entire affair with an uncomfortable feeling that I might suddenly be separated from my backbone. Of course, he was all right and he stood up excellently under the nervous tension. I honor him as having faced a real test nobly and I would be glad to write his name but unfortunately with the passage of years I have forgotten it.

In the morning it was a very subdued bunch of Indians that took up the day's march. We mounted on unloaded pack mules all the wounded able to ride but left a large convalescent camp of the more seriously injured under the big tree where the doctor had left them. Their own medicine men took charge, and we left them medicine and bandages with instructions for their use but we later learned that they refused to use them, and that many of the wounded died as the result of their barbarous practice.

In the course of a week or more we arrived at the San Carlos agency, and it was with a sense of great relief that I accepted receipts for warriors, squaws, papooses, Indian scouts, unconsumed provisions, and stores. After a few days my little command took the back trail with all the pack mules. When we arrived at the scene of the fight we found all the convalescents gone. Some of them later straggled into San Carlos agency, but whether the rest all died or whether some stayed out in the hills I never knew.

When we reached Camp Verde we learned that General Crook had been succeeded by Gen. August V. Kautz. I made a report of the affair to departmental headquarters, but perhaps in the confusion of changing command it was pigeon-holed and overlooked; at least I never heard of it again and I know it has never been printed. Shortly after, the 5th Cavalry was ordered to change stations with the 6th. We marched across Arizona, New Mexico, and into Colorado, 1,150 miles, the nearest railroad point in those days, from whence we were transferred to posts in Kansas.

The manuscript of General Eaton, written in his 82d year shortly before his death, was read and approved by General Eben Swift and General Charles King. Both were officers of the 5th Cavalry at the time of the episode discussed.

The Cavalry of the Vikings

By Fletcher Pratt

IT is a truism of history that the whole structure of medieval life was dominated by the armored knight who depended on shock action as the arbiter of battle and who was capable of riding down any type of infantry that existed for centuries. It is generally assumed that this soldier came into being as the result of some mysterious process of evolution.

This is an error; the feudal horseman came into being in response to a military necessity as urgent as that which produced the tank, and of much the same kind—to wit, that of dealing with a highly mobile infantry armed with powerful defensive weapons. The parallel with modern conditions is extraordinary and if one does not stretch it too far, leads to some interesting speculation on the future.

The infantry whose impact on the European cosmos produced this result were the Vikings of Scandinavia. Before their advent, the mounted arm generally was at the lowest ebb. At Châlons the last of the ironclad Roman legions had shivered to fragments Attila and his horde of the best heavy cavalry in the world; at Tours the footmen of the Franks "standing like a rampart of ice" had demonstrated that the light horse in which the Saracens specialized was helpless against steady infantry. The Germanic races who were building a new world with the wreckage left by the Romans were essentially fighters on foot and, having rolled back in both directions the tides of horsemen that threatened to engulf them, now settled down, satisfied that they had attained the infinite.

Such cavalry as there was in existence inspired them with a well-merited distrust; a situation not without its parallels in the years before the World War. The parallel is even more striking when one discovers that, in the military establishment of Charlemagne, the pro-

Photos courtesy of Archives Photographiques

Left: European Soldier of the Empire of Charlemagne. This was the type of fighter the Vikings were called on to meet. His equipment was obviously less good than theirs. (See other picture.) Right: Typical Viking Infantryman, full equipment. (From models, Musée de l'Armée, Paris.)

portion of cavalry to infantry was about one to eight —or the average figure for Europe in 1914.

Upon the horizons of this world the Vikings appeared as raiders coming up out of the sea. Like the other Teutonic tribes, they were, in the beginning, purely infantry; their technique was to land from their ships, sack town or monastery and leave the way they had come. In 810, the date of the first great raid, they had never heard of such a thing as cavalry.

For their ignorance of the mounted arm two factors were responsible: the rocky, mountainous and wooded character of their homeland, which placed a heavy premium on men who fought afoot; and the insignificant character of the horses available. The only horse they knew was the northern "forest horse," about the size of a Shetland pony. It existed among them as a kind of zoological curiosity; matches between fighting stallions were arranged in the same spirit that Cubans arrange cockfights or the Japanese matches between pairs of combative crickets. Even for plowing the ox was preferred; and a saga of early date remarks on King Harald Hilditönn's desire to ride into battle as the crotchet of an old man who was probably suffering from softening of the brain.

Yet in half a century, this people had some of the best cavalry in history * * *

After the first Viking raids, these visitations increased rapidly, both in number and intensity. The available plundering spots right on the coast were soon exhausted, and it became necessary to hunt farther afield. From the Viking point of view that had two disadvantages. The first was that they had to make long, uncomfortable marches, clad in armor and loaded with booty. The second was that the nearest local baron had time to gather up his levy and fall on them on the way back to their ships; and among these levies, however badly mounted, however clumsily handled, there were sure to be a few horsemen.

The Vikings were pirates, but they were professional pirates and possessed the best military brains of their age. Some genius among them observed this horse-business, and suddenly in 866 there comes an ominous entry in the Anglo-Saxon Chronicle—"A great heathen army came out of the land of the East Angles and there was the army a-horsed."

In other words, someone had discovered a new raiding technique, and a technique that spread like wildfire, for in two decades it had become the normal one. It consisted in neglecting all other objects on landing for that of gathering up all the horses in the district. Every horse they got increased the mobility of the whole body right up to the point where they were all on horse-back. There was no need for conserving the horses; they were pushed to the utmost, and the raiders moved to enormous distances on them.

When an enemy force was reported at hand, or a fortified town was approached, the main body dismounted at once and formed up in one of the close knots of infantry in which the Vikings fought. Small parties of mounted missile-weapon men, who acted as front and flank guards on the march, were pushed out to either side, with the object of working around the enemy formation, then dismounting and attacking them from the rear. But the fighting was all done afoot; the only men who remained mounted in the presence of the enemy were the irreducible few necessary to keep contact. Even commanders fought afoot; time and again we have evidence of this, as at Brunanburgh where King Athelstan "left the battlefield while his men pursued the fugitives. He mounted his horse and rode back to the burgh."

But the scouting services were extraordinarily well carried out. During a Viking raid in Brittany, for instance, the King of France came down and beat the Danes in a big battle; they retreated, but at nightfall the Count of Poitiers arrived with his host to aid the King, who, satisfied that he had done a good job, had meanwhile moved off. The scouting service of the Danes advised them of the Count's arrival and the King's departure; they boiled out of their camp, attacked the Count, beat him in a night battle, stormed his camp, and eventually got safe away.

Under such conditions the Vikings did about as they pleased. They held all the trumps. They were well-armed, adequately armored professional soldiers, of high mobility, with good scouting services, against hastily raised levies. Their movements were rapid and unpredictable, and tactically they were in a position to deliver a considerable amount of fire-power against any part of an enemy formation and follow it up instantly with a close-range infantry attack. The military problem this "mounted infantry" presented seemed quite insoluble.

At least, so thought Alfred the Great, who was one of the most intelligent men of the age. Taking advantage of England's geographical position he avoided the question entirely by basing his defense on a powerful navy. Still, the problem had to be met some time, as all military problems must if civilization is to continue.

It was another Viking who ended this delightful state of affairs. He was Sveyn Forkbeard, King of Denmark, who made one of the mightiest of all Viking raids, ending in nothing less than the conquest of England. But no sooner was he installed than he discovered it made no difference at all to Norwegian, Swedish and even Danish raiders that England was held by one of their own race. Sveyn's new kingdom was harried from north to south in the good old style: landing, rounding up of horses, swift mounted march, and equally swift departure.

After one of these occurrences, the chronicles record that "at this time the Danes established the host of the Thingmannalid in England. They were paid-warriors and very valiant." They were rather more than this; they were something as new in the then world as the tank in 1916. They might be described as the "Armored Mounted Corps." Clad in complete armor they were (extraordinary invention!) trained to fight on horseback. They were allowed considerable freedom in the choice of weapons, but the spear was obligatory, and the axe, the old Viking infantry weapon, was frowned on in favor of the sword. Nor was this the greatest change—for they were trained to ride bridle to bridle and to depend on shock action.

The larger organization of the corps was as intelligent as its tactical training. Headquarters and the

From the Bayeux Tapestry. The horsemen at the left are a typical group of cavaliers of the Thingmanna type.

main body of the Thingmannalid were at London, ready to repel an invasion in form, but in all the important centers were small bodies of these soldiers, fixed there as stiffening of the local levies and preventatives of small raids.

The effect of this sapient invention was immediate and overwhelming. When a raiding party landed the nearest post of Thingamen clattered to the spot. If the raiders dispersed to catch horses they were cut to pieces. If they did not, there was no raid; and, if they held to the tight infantry formation for a march, the local levy had plenty of time to gather round and flood into the breach in their ranks that the ponderous charge of the armored horsemen presently made.

The account in the sagas of the last great Viking invasion—that of King Harald Hardrade—shows Sveyn's armored cavalry at its full value, though it occurred some years after that monarch's time. Landing at Stamford Bridge, the Norsemen at once set about gathering horses for a march on London but—

"When they came near the town they saw great clouds of dust and a large host on horseback with fine shields and shining armor. 'These must be the Thingamen,' said King Harald, and ordered the horn to be blown for his men to assemble." He seems to have had a healthy respect for the English cavaliers, for he formed his army in a tight circle with the weapon-throwers inside.

"* * * The array was thus formed because the king knew the Horsemen were wont to ride in small squads and then draw back at once. The king's guards, very picked men, were in the circle, the archers also, and Tosti with his men. 'Those who stand outermost in the array,' the king said, 'shall put the handles of their spears down on the ground and their points against the breasts of the horsemen if they attack; those who stand next shall direct their spear-points against the breasts of the horses; keep the spears thus everywhere and they cannot advance. Let us stand firm and take care not to break this array."

In other words, faced with shock action on the part of armored, fast-moving troops, he could think of nothing better than passive defence. This produced its natural and usual result. The English horsemen rooted around for a while without accomplishing very much; then the Norse infantry, tired or bored, broke ranks; the Thingamen got in, and it was all over.

It is one of the mysteries of history why Harald Godwinsson, the winner in this battle, dismounted these invincible cavaliers at Hastings a week later and repeated Norse Harald's experience with a passive defence in the face of a mobile attack.

But short as is the interval, the battle of Hastings is already outside the limits of the Viking age. For Sveyn's success with armored shock troops had given England such security that the invention had instantly spread to kindred Normandy, and from Normandy right across the whole of Europe. And wherever it touched it brought about the end of the Viking period and the beginning of the Middle Ages.

Cavalry at the Virginia Military Institute

By Second Lieutenant C. H. Dayhuff, Jr., Cavalry Reserve

STANDING serenely on "The Hill" overlooking the sleepy little town of Lexington, Virginia, the yellowish-gray walls of the Virginia Military Institute stand as a beacon heralding the greatness and fame of that old military college.

Formerly an arsenal in which state arms were kept, the Institute was founded in 1839. Before this time a small detachment of hilarious soldiers had occupied the post, and repeatedly the citizens had urged that something be done to eliminate this objectionable group from the town. Colonel Crozet who had been an Engineer officer on Napoleon's staff during the retreat from Moscow was the president of the First Board of Visitors of Virginia's most famous college.

The first year or two of the life of V. M. I. were hectic. The buildings were not completed, and the severe winters caused many hardships for the cadets. Through the leadership of the superintendent, Francis H. Smith, the trials were withstood, however, and the growth and fame which the old college has gained since that time throughout the country, and throughout the Army, is a criterion of its achievement.

General Stonewall Jackson, who was professor of experimental philosophy and artillery tactics left the walls of V. M. I. to achieve immortal fame during the Civil War. Sir Moses Ezekiel, the great sculptor, Clinedinst, the famous painter, Matthew Fontaine Maury, the scientist and naval expert who charted the Pacific, Admiral Richard Byrd, the intrepid explorer, and many others whose names are well known throughout the world have all been connected with the fame and prestige of V. M. I. Many officers in the Army, Navy, and Marine Corps at the present time received their early training under the high arches of the Institute.

V. M. I. is strictly a military college. The backbone of the whole organization is its military system. It was the aim of the founders to pattern the college after that of West Point, and to this day that splendid example has been followed. The cadets wear the same kind of uniforms, and the military duties are about the same in the two schools. Academic courses are offered at V. M. I. in civil, electrical and chemical engineering, and in liberal arts.

In 1930 at the completion of his tour of duty as Commandant of the Marine Corps, Major General John A. Lejeune, became the fifth Superintendent of the V. M. I. His inspiring leadership and his profound interest have done much toward the building of the greater V. M. I.

It would be well to state that a cadet specializes in his chosen branch of the service throughout the four years that he is at V. M. I. and that upon graduation he receives his reserve commission in that branch. Contrary to the procedure in most of the colleges throughout the country in which the R.O.T.C. is required for two years only, the system at V. M. I. requires a four year course, and unless the cadet is an alien or has been declared physically unfit to enlist in the R.O.T.C., he must fulfill all requirements in this course, as well as in his academic course, before he can receive his diploma upon graduation. Cavalry, Infantry and Artillery are the units offered at the Institute at the present time.

For all ordinary functions, parades, and routine duties the Corps is formed into a regiment of infantry, with two battalions of three companies each. Within these battalions the companies are arranged according to units. The first battalion has two companies composed of cavalrymen, ("A" and "C" companies) and one company of infantrymen ("B"). The second battalion composed of "D", "E", and "F" companies is purely artillery. At unit drills and at special instruction periods these companies revert to cavalry, infantry and artillery as the case may be.

Unit drill, infantry drill, theoretical instruction, and evening parade are all part of the daily routine. Inspection of arms and of equipment, followed by a regimental review, is a regular procedure every Saturday at Saturday Evening Inspection. Once a month a garrison review of all units with their respective mounts and equipment is held. Ceremonies of all kinds are a regular part of the cadet life, and each cadet soon becomes familiar with all phases of the military service. A twenty-four hour guard detail keeps watch over the barracks. The usual detail consists of an Officer-in-Charge, who is a tactical officer, a cadet officer who is the O. D., a private of the First Class who serves as the O. G., and the necessary noncommissioned officers and privates to round out a detail of about thirty men. The detail is changed daily, and the cadets mount guard by companies.

The cavalry unit is a very popular one and is very much in demand by the "Rats", when they matriculate. The quota is rapidly filled, and many a potential cavalryman has had to take a second choice of one of the other branches for his training, because he arrived too late to "jine the cavalry."

The members of the fourth class cavalry receive an extensive course in equitation, cavalry drill, scouting and patrolling, first aid and hygiene, musketry and in minor tactics. Each man is given every opportunity to command the squad, the platoon and even the troop before his first year is completed. This preliminary drill by which the classes drill separately is very beneficial, for it instils confidence in the individual before he is ever turned to duty with the "Old cadets."

Members of the other three classes branch off into the many channels of instruction which are essential to a comprehensive knowledge of the cavalry service. Practically every phase of a cavalryman's life and routine is tasted by the cadets. Equitation, map problems, tactics, machine gun and machine rifle instruction, musketry, pistol and sabre work, stable management, history, military law, hippology, and the other courses so familiar to cavalrymen are diligently pursued.

Each spring a practice march is taken by the whole Corps, and the cavalry troop, which is composed of first and second classmen, is given much opportunity to experience actual field conditions and to participate in maneuvers. At the end of the Second Class year the cavalrymen attend a six weeks' training course at Fort Myer, Virginia, where the dust and heat and the continual grooming and cleaning of equipment, and the routine work are made bearable, perhaps, by the closeness of Washington, D. C.

For the last three years the members of the First Class cavalry have staged a very interesting and gruelling endurance contest for the entertainment of visitors during Graduation Week. This contest which is a variation of the stakes which are held at the Cavalry School, is perhaps the most interesting bit of entertainment offered at Finals. The parade ground and the hilly country nearby make the test one of real endurance for both man and horse. A cup is donated to the winner by the Second Class cavalry. This idea was adopted in 1930 while Captain Kent C. Lambert was the senior instructor of Cavalry at the Institute, and from the popularity and enthusiasm which is shown each year by cadets and by spectators, it is evident that this will be an annual event.

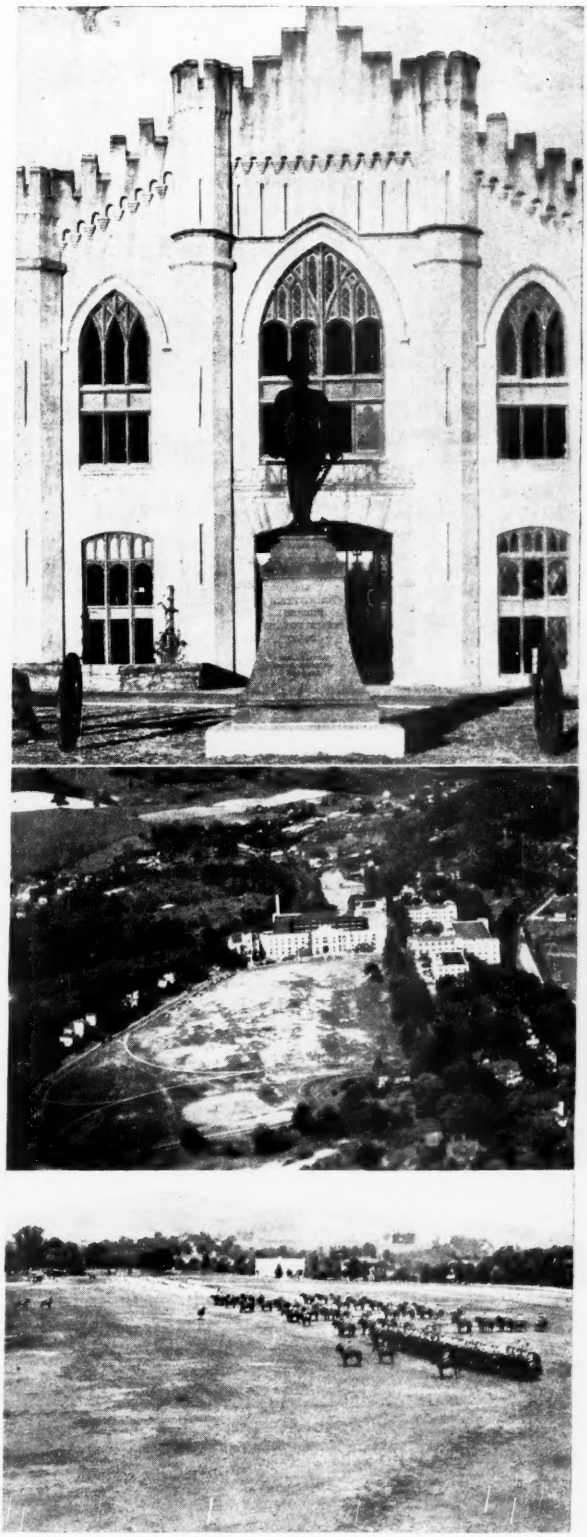
Nothing can be said about that beloved mounted sport, polo, for that glorious game has been discontinued as a varsity sport, and from all indications it will become one of the heritages of the past. Sad, but true.

Improvement has been made on the stables and in the corrals during the last few years, and a very efficient enlisted detachment of the D. E. M. L. serves to facilitate the excellent instruction given by the cavalry officers on D.O.L. duty.

The cavalry instruction is very thoroughly and efficiently handled by Captain Bertrand Morrow and Captain George D. Wiltshire, and the morale and efficiency of the cavalry unit are extremely commendable.

Quarters are not provided for the Army officers other than the Commandant of Cadets, who is also the P. M. S. & T. All other officers are on a commutation status and live in Lexington. At the present time Major John Magruder, F. A., is Commandant of Cadets.

In conclusion it might well be said that the extensive work which is covered and the discipline to which a cadet is subject for the four years that he is in V. M. I., not only fit him to handle his commission properly but make him a better citizen.



Top: Statue of Stonewall Jackson on West Side of Barracks. Center: V. M. I. from the Air. Bottom: Garrison Review of All Units.

Modern Methods in Stream Crossing

The Infantry with a Tug at Its Bootstraps, Conquers the Unfordable Streams of the Philippines.

By Major Edward M. Almond, 45th Infantry (PS)

MILITARY history is replete with notable achievements of troop movements across swift and unfordable rivers. There is real leadership, and romance as well, in the commander who scorns and crosses swift waters which separate him from his objective. The military leader who, by any means, increases the power of mobility of his troops very materially improves thereby his chances of success in campaign.

When planning our present day training, however, we are content, usually, with the reading of military history and the thought that such matters are so unusual as to have little or no application to us moderns. We are prone to forget that what confronted Alexander in his passage of the Hydaspes (326 B.C.); Hannibal on the Rhone (218 B.C.); Gustavus Adolphus and his 300 Finns in crossing the Lech (against Tilly in 1632); Napoleon's crossing of the Danube (before the Battle of Wagram in 1809); Wellington and Marmot in the Peninsular Wars (prior to Salamanca in 1812); Lee's retreat from Sharpsburg (1862); Funston at Calumpit, P. I. (1899); the Japanese at the Yalu (1904); all had real application when the 5th (U. S.) Division crossed the Meuse at Dun-sur-Meuse (1918) and that, in the future, the same necessities may arise in military operations in any country where rainy seasons obtain or deep streams exist.

The real trouble with us lies in the fact that we are awed by the thought of being responsible for rapidly passing a military unit and its equipment over an unfordable and formidable stream without the aid of a bridge or the bridging equipment of engineers or locally obtainable materials. These latter not only consume valuable time for construction but may not be available. If we only knew "how" to make the crossing by our own devices, how much simpler the problem would be!

In 1866 Wrangel's Prussian Brigade received the following order: "Cross the river (Saal) some where, *no matter how*, and attack (the Bavarians) by envelopment." This force had no "special" equipment, no engineers, or pioneers, to assist it. The commander, must have thought many times "But how"; he no doubt set his column in motion with strong misgivings; he, at the time, had no way of knowing that luck awaited him in the form of an old foot bridge which the enemy had only partially destroyed.

Such luck did not await Funston at Calumpit when confronted by the same proposition and the success of whose crossing was dependent upon a single old raft (capacity 8 equipped soldiers) and the intrepidity of two swimmers towing a rope to the far bank of the stream. This, under hostile fire, being a most time consuming and restricted method of crossing; restricted, because training had not pointed out more rapid methods.

The present Philippine Department Commander, Major General E. E. Booth,—having had to ask himself the question "How?" during his service in the Philippine Insurrection,—soon after assuming command of the Department in 1932, inspired the infantry of the Philippine Division with the desire to learn "how" to speedily cross unfordable streams without the assistance of other units.

The Philippine Division and 23d Brigade (PS) Commanders,—thru their thoughtful supervision and helpful suggestions, made such training possible,—and the troops,—from regimental commander to private,—by their enthusiasm and skill have made remarkable progress and have acquired most gratifying proficiency in this training.

In 1813, Tsheritshev's Cavalry Corps swam the River Elbe; the cossack riders guiding their mounts (stripped) and dragging behind them their equipment and loot,—skilfully packed in small, wickerwoven baskets. One hundred and twenty years later we find the Philippine Scout soldier crossing wide, swift, unfordable streams employing the same principles and using only slightly different methods.

The system of instruction, and the results thereof, in one battalion of infantry[1] of the 23d Brigade (PS) has been selected in order to illustrate what may be accomplished in a reasonable period of time.

The 23d Brigade Training Directive prescribed that troops should be taught to rapidly cross unfordable streams with combat equipment on rafts (or otherwise) and by swimming the personnel and animals (in herd); that tactical exercises should be conducted; and that all troops would undergo such tests as might be prescribed at the end of the training period.

The training began early in September and continued until the beginning of December, the instruction paralleled other training subjects; the period allotted was necessarily an extended one, due to the scarcity of life saving apparatus (row boats and life preservers) and to the limited number of river crossing points suited to initiating untried troops to the unusual risks involved.

[1] It is to be noted that the equipment of all companies includes pack animal transportation for infantry weapons, rations, forage and ammunition. The rifle company machine guns and ammunition therefor are carried on 8 pack mules.

The training objectives fixed upon by the battalion commander were as follows:

a. To attain proficiency in crossing *all* personnel and *all* equipment (including animals and escort wagons) pertaining to the battalion.

b. To investigate *all* expedients known to swimming, ferrying or floating personnel or equipment over unfordable streams. This with the view to rapidly utilizing any or all of these if available at the time and place required.

c. Finally, *and most important,* to develop—if practicable—methods with which the battalion could pass rapidly over an unfordable stream (10 to 200 yards in width) with little or no dependence upon materials other than the standard combat equipment of the component units.

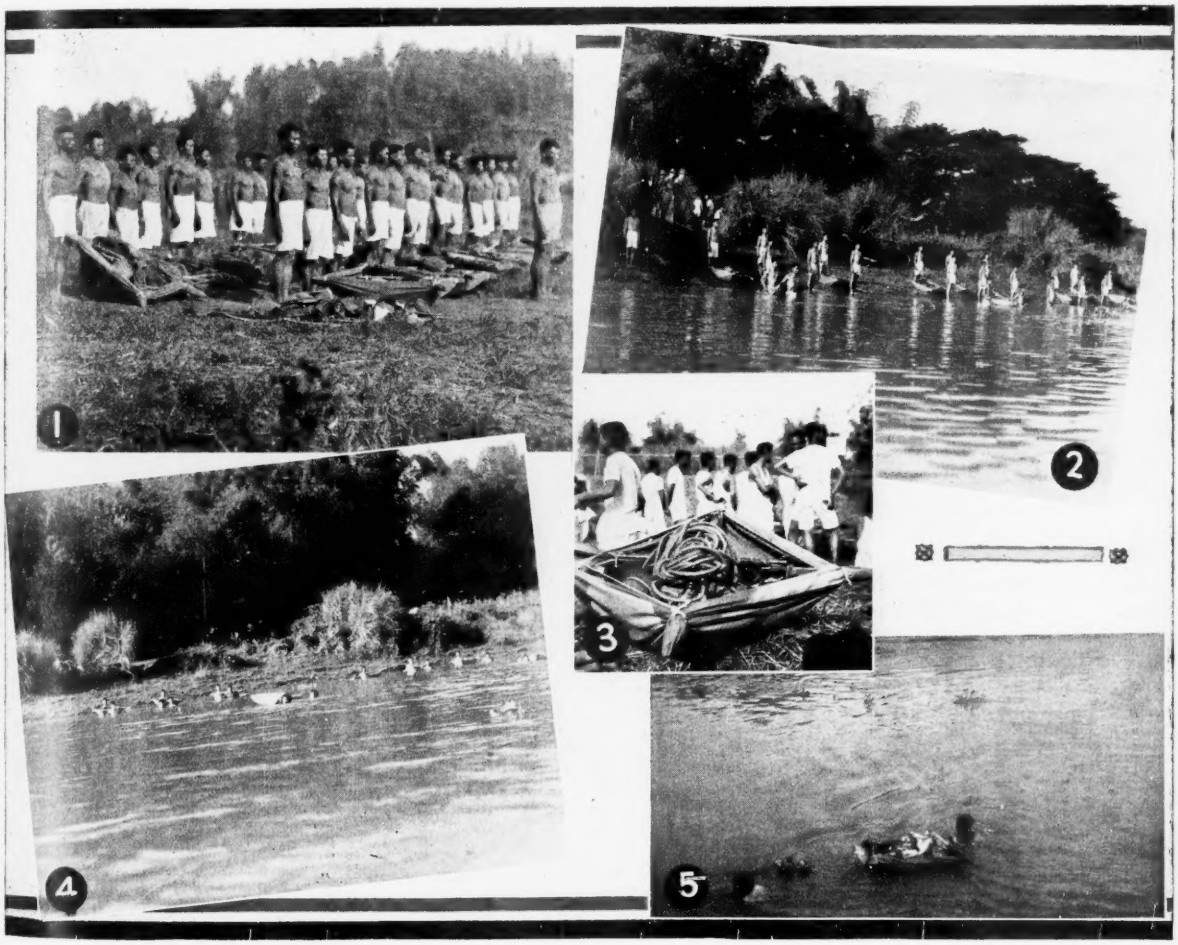
The obstacles selected for this training were the Pasig and the Mariquina Rivers,—near Fort McKinley, P. I.; *the Pasig, just below its junction with the Mariquina is an especially swift and unusual stream due both to the then existent rainy season and to the tidal effects of Manila Bay (when the tide is receding the current of the river is greatly increased and at rising tide a cross current results which is far from desirable).* The width of the river is 400 feet, its depth varies from 12 to 18 feet and the average current is 5 feet per second.

The Mariquina River is somewhat wider, about the same depth and slightly less in rate of current.

These streams can be considered to be as difficult as will usually be encountered in military operations.[2] Less formidable obstacles were to be desired but were not available.

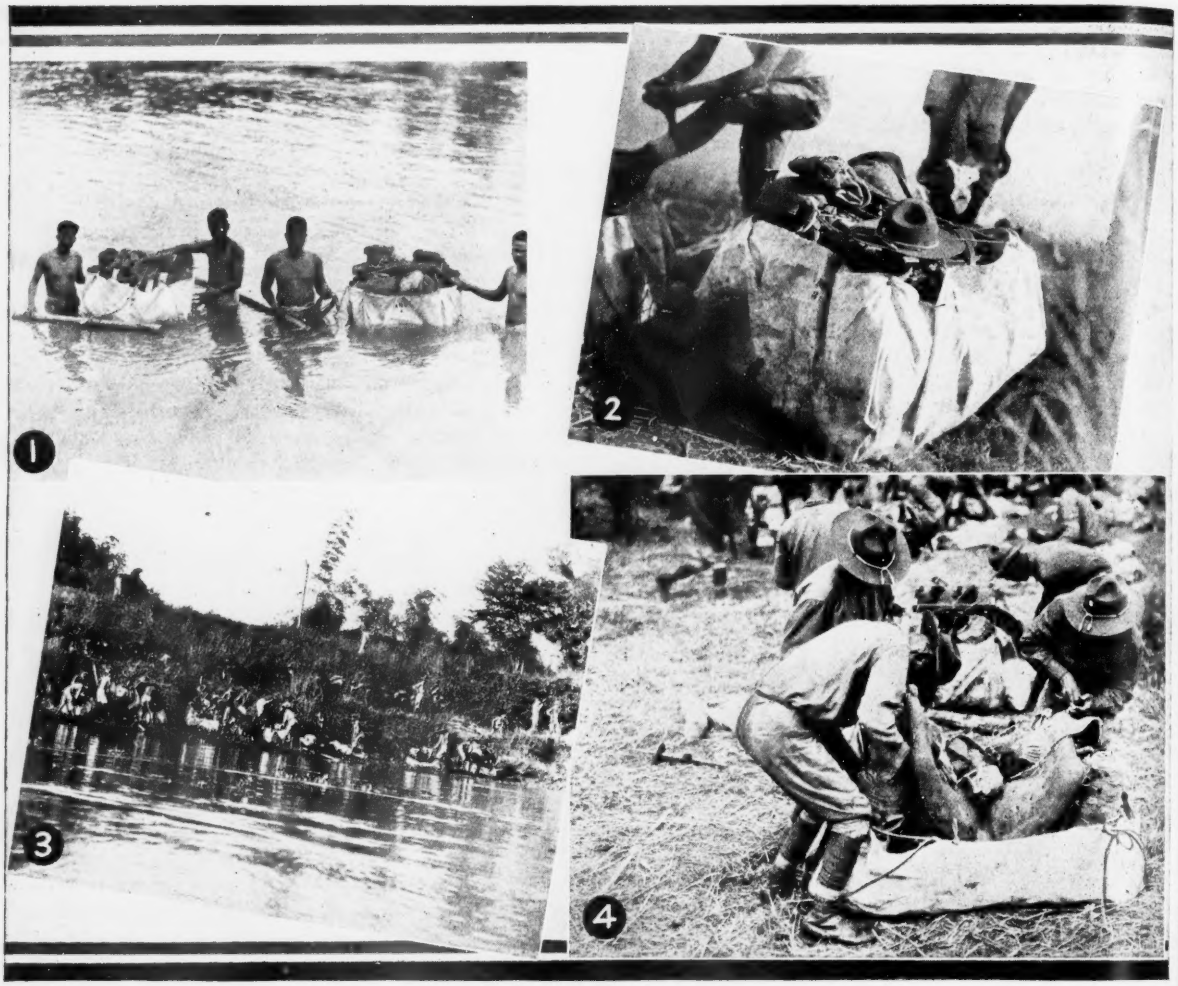
This discussion will not include the details of the many methods investigated by the troops during the course of this training; only those expedients which proved to be the simplest, involving materials likely to be available, and which can be speedily utilized will be cited. Such assistance seems to be the most desirable in campaign; the methods finally adopted apply in any situation or in any country; and furthermore,

[2] The Meuse River (near Dun-sur-Meuse, France) is 80 to 100 yards wide and the Limmat River (famous for Messena's classic river crossing against the Prussians in 1799) is about the same width.



SERIES NO. 2

1. Infantry section prepared to swim unfordable stream; all individual equipment including arms and ammunition made into 2-man shelter half (canvas) floats. 2. The section enters the river. Scouts, first in, waist deep. 3. The 2-man rifle float on land. 4. The rifle section, with all equipment, swims the Pasig River which is 400 feet wide and 18 feet deep. 5. The 2-man float in the water.



SERIES NO. 3

1. Two machine gun company manta floats containing all equipment of one machine gun squad. 2. Machine Gun company float. Contents: Two Phillips packs and three soldier packs complete in canvas manta container. 3. Machine gun company, complete for field service, preparing to swim unfordable stream. 4. Machine gun company float. Contents: one machine gun and pack saddle, complete, three soldier packs, in canvas manta container.

most of the expedients adopted are inherent to the normal equipment of the unit concerned.

It should be noted that infantry, in the past, when required to swim unfordable streams has resorted to some or all of the following aids to crossing:

a. Wooden Rafts—if materials and time to construct permits.

b. Ropes, or cables, stretched from bank to bank.

c. Floats, such as doors, logs, barrels or boats.

In addition to the foregoing, the training of this battalion included tests of floats made of: Canvas paulins; tents (shelter and other kinds); canvas wagon-covers; canvas mantas; bamboo (single poles and rafts); banana-plant stalks; "G. I." Cans and cooking boilers (made water tight with pieces of burlap; "bahauca vine" and split bamboo (as rope); and the native canoe (banca).

The time devoted to this training in each company was approximately 1200 man-hours for personnel (or 20 hours per man) and 300 man-hours for animals (or 15 hours per animal).

It should be remembered that the above represents the time devoted to an unfamiliar subject and includes much experimentation in methods now discarded for those adopted and illustrated in this discussion. In future training, the above can be reduced 75% for personnel or partially trained animals.

The equipment floated over the streams included all items authorized in Tables of Basic Allowances (less ammunition and extra clothing) for a peace strength infantry battalion consisting of 11 officers, 306 enlisted men, 43 pack mules, 10 riding horses and two escort wagons (including 8 draft mules and harness therefor). To prepare the men and equipment of this battalion for swimming and floatation required approximately 20 minutes at a test near the end of the training period (this included all floats and escort wagons).

The final results obtained from this training in stream crossing methods can be set forth best by the following statements and descriptions of floats,—illustrated by photographs, both on land and in the water:

a. No materials other than canvas and the necessary rope for lashing same were required for the types of floats finally selected as best and simplest for the purpose of moving equipment across the water.

b. Only five types of floats were adopted for crossing the authorized equipment of the infantry battalion. The following describes, in brief, these type-loads:

i. The *"2-Man Rifle Float" (see photos: Series No. 2):* This float can be prepared by 2 men in 7 minutes. The two shelter halves (one on top of the other) are placed on the ground, and the remainder of the two packs and the clothing of two soldiers are placed in the center of the canvas. Now the rifles, (crossed to give rigidity) are placed on top of the packs and clothing. The float is completed by binding the 4 corners of the outside shelter half to the 4 extremities of the rifles by means of the shelter tent ropes.

In a similar manner (see photo of Float, 1, Series No. 11), using 2 3-foot sticks or two shelter tent poles instead of rifles; a machine gun complete can be floated in a shelter tent.

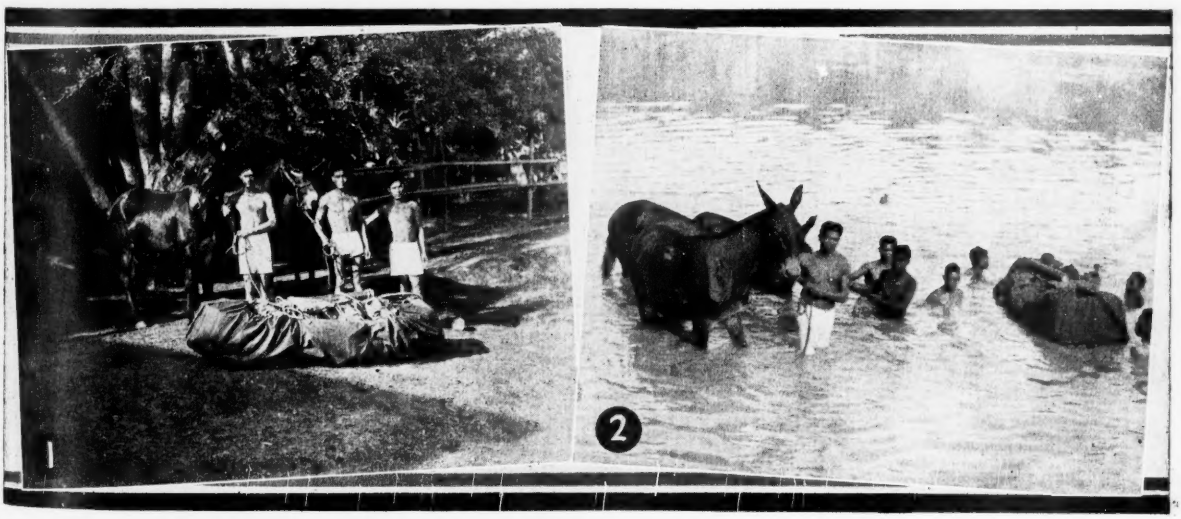
ii. *The "2-Man MG Float" (applies also to "Pack (or other type) Saddle" or to "Ammunition Loads) (see photos: Series No. 3).*

This float is prepared by 2 men in 10 minutes. A 6′ x 6′ canvas manta (having 3 to 5 metal eyelets on each side) is spread on the ground. Next, place 2 pack saddles, one machine gun (or 8 boxes of MG ammunition) and 3 individual packs in the center of the canvas. By means of a 20 foot ½″ rope (thru the eyelets) all sides of the canvas are drawn up equally against the two pack saddles (set on edge) until the bundle is practically rigid.

iii. *The "Cargo Float, Kitchen Load" (see photos, Series No. 4):* Four men can prepare this load in 5 to 10 minutes. A small 12′ x 15′ canvas paulin (part of the company Baggage Mule load) is spread upon the ground and the loads of the three company train mules (consisting of 3 pack saddles, 1 day's rations for 80 men, one kitchen, pack, (cavalry, artillery or Phil. Scout type); shovel; pick; axe and cooking utensils are all arranged as an oblong solid (approximately 2½′ x 2½′ x 6′). The canvas is drawn up against the sides and ends of this mass so that all walls are at least 1½ ft. high; lash the load with a 50′ to 75′ length of rope. This load can be propelled in the water by two men.

iv. *The Cargo "Ration and Baggage Wagon Float" (see photos: Series No. 5).* This float can be prepared in from 8 to 12 minutes by one squad in a manner similar to the "Cargo Float, Kitchen Load," by using a large canvas paulin (18′ x 39′) and placing therein all of the company property ordinarily carried in the field on the company "Ration and Baggage Wagon" (such as officer bedding-rolls, GI cans, small wall tents, etc.) except that carried in the MG floats, and in the kitchen float. Three or four men can ride on top of this float without danger of sinking it. Four men can propel it in the water.

v. *The "Escort Wagon Float" (see photos: Series No. 6):* The escort wagon is prepared for floating in 10 minutes by two squads. First remove the wagon body and place it on the wagon cover (previously spread on the ground or on the bolsters of the wagon frame). Now draw the canvas up around the body so that no side of it is less than 18 to 20 inches deep. Lash to the body with short ropes. Replace the body on the wagon and lash it to the wagon frame to prevent separation when floated. Roll the wagon into the stream and it floats. This wagon can be propelled across water by 6 men; two men guiding the wagon by means of a 10 foot rope tied to the end of the wagon



SERIES NO. 4

1. Cargo load. Contents: Pack loads of three kitchen and ration mules. 2. Cargo load afloat. Contents: pack loads of three kitchen and ration mules.

tongue while the four other men (one near each wagon wheel) swim and push the float.

c. The proficiency attained by the several companies at the end of their 1200 man-hour training period[3] was as follows:

1. One hour was the average time required by each rifle company for one round trip across the river[4] for approximately 60 men, all individual and unit equipment, and 7 pack mules.

2. One hour was the average time required for a one way crossing by the machine gun company; the slower time for this unit being due to the fact that there is equipment for 22 pack animals and 7 horses requiring about 13 cargo floats for these equipment loads. (See photos: Series No. 7).

3. "2-man Rifle Floats" and "Cargo Floats" can be prepared in 7 and 12 minutes, respectively.

4. Generally, all personnel charged with the "2-man Rifle Floats" could cross the river in approximately 10 minutes after the command "Prepare for Crossing" had been given.

d. The proficiency attained by the battalion, as a unit, may be stated by the following results of tests:

1. To cross the entire battalion, using canvas only, required:

a. 2 hours; Bn. on a 2-Co. front; under an assumed tactical situation.

b. 30 to 40 min. per Rifle Co. (incl. animals) without regard to tactical situation.

c. 1 hour; Bn. on a 4-Co. front, from march column to march column.

d. Extra equipment; (1) 31 canvas mantas 6′ x 6′ (for MGs, Ams and Pack saddles).

(2) 4 large paulins (1 per Co. for Org. Property Float).

2. The following floats were required for the crossings of 208 men and 36 animals:

i. All men crossed by swimming *(a few men in each company required assistance of towing by ropes attached to the big floats).*

ii. 42 "2-man rifle floats *(see also another test in photo. No. 1, Series No. 2).*

iii. 20 "2-man MG and pack saddle floats."

iv. 4 Cargo Floats Kitchen and Ration.

v. 4 Cargo Floats Escort Wagon Loads.

vi. 2 Escort Wagon Floats.

3. From 5 to 12 minutes was the average time necessary to launch from 35 to 45 animals (in herd), to swim them and to tie up on the far bank of the river. *(See photos in Series No. 8)*

4. It requires from 5 to 6 hours for this battalion to cross the stream at the same point as in 1 above when bamboo or other wooden floats are used. For example: 332, 20-foot bamboo poles will be required to construct the 17 rafts necessary to move the machine guns and organizational property. To procure material and construct these rafts, simultaneously, requires 84 men, assuming the material to be within ½ mile of the river bank.

5. This discussion includes photographs, with descriptive titles, (see Series No. 9) intended to illustrate "other" methods of floating equipment such as flat bottomed rafts, banca ferries, and bundle (or pole) floats, but, as has been shown above, although these may be desirable they are not necessary to a successful stream crossing.

6. During the early stages of this training one company commander prepared a large bamboo raft requiring 35, (30 foot) poles to float the loads of 5 pack mules; it required about 6 hours for 4 men to cut and transport the material to the river's edge and 6 men worked 4 hours on the raft's construction. The equipment concerned could have been transported in 4 mantas requiring from 5 to 10 minutes preparation. The foregoing is illustrative of the selection of simple, effective, and speedy methods of crossing expedients at the beginning and at the end of the training period.

Having determined the suitability of canvas for floating the equipment of the battalion, it was decided to conduct a battalion tactical exercise *(copy attached)* in Stream Crossing Methods. *The situation required the troops to approach the Pasig River; the battalion commander to issue necessary orders which included dispatching a covering force (of five squads) to secure the high ground beyond the stream on a front of some 2000 yards, and then to cross the main body of the unit,* less its wheeled transportation (the ammunition and heavy baggage loads). This crossing was accomplished on a two-company front in a period of two hours; the rifle companies following the covering force and these, in turn, were followed by the remaining rifle and machine gun companies.

In order to present a real problem in the technique of crossing unfamiliar streams, the battalion was immediately assembled on the far bank of the Pasig and then moved in route column across country for a distance of two miles to the vicinity of a railway bridge over the Mariquina River,[5] this area had not been visited, previously, by any officer or man of the battalion. The column was halted while a patrol crossed the river by the railroad trestle bridge to make a reconnaissance of the far bank for suitable landing spots for the animals. Having selected localities, all equipment was removed from pack and riding animals and the crossing began.

Some 35 animals swam the stream (one man accompanying each animal) and were tied up on the far bank in 12 minutes from the starting time. In one hour all personnel, carrying all the equipment (thus utilizing the bridge as far as practicable), had crossed the railroad trestle and the unit awaited further orders.

Having successfully crossed the Pasig and Mariquina Rivers numerous times both from the technical and the tactical standpoint and having adopted effective methods for crossing its equipment by means of

[3] It must be remembered that most Filipinos are excellent swimmers; no claim is made herein to teaching non-swimmers to be expert in this period. However, some 3 to 10 men per company were trained over a period of 3 months and these men crossed the river with their unit.

[4] The Pasig River is 400 feet wide, 18 feet deep and has an average current of 5 feet per second at this point.

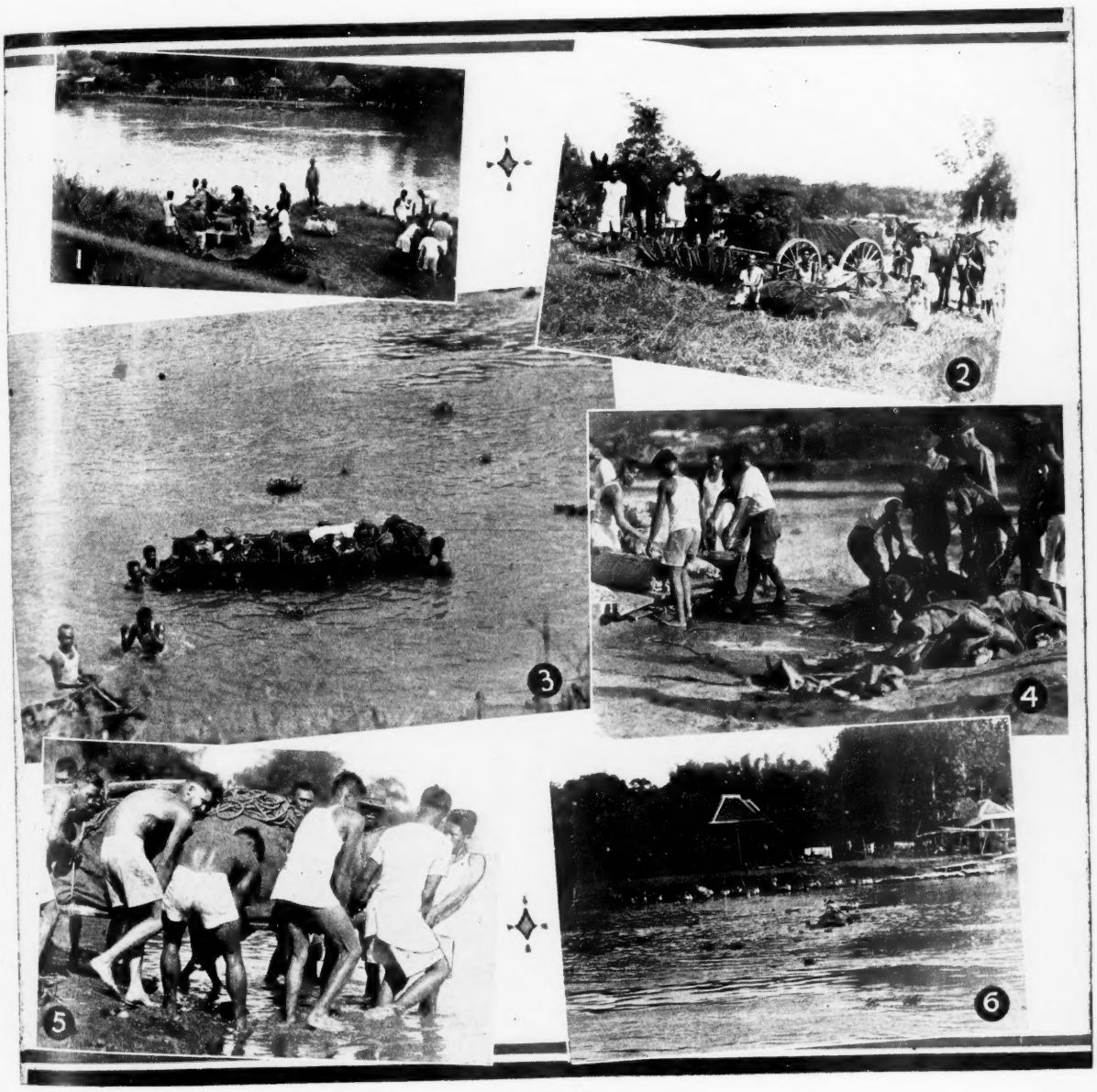
[5] Width 450 feet, depth 12 ft., and current 3 feet per second.

the unit's own canvas, training of this nature was suspended pending the test to be prescribed by higher authority. This test was held in the form of a demonstration for the Brigade Commander in "Methods of Crossing Unfordable Streams." The demonstration was performed in the presence of most all of the officers and men stationed at Fort McKinley, numerous visitors from various Army and Navy Posts of the Philippines and prominent civilians in the City of Manila.

This training has shown, conclusively, (by demonstration and by the records of the included photographs) the following:

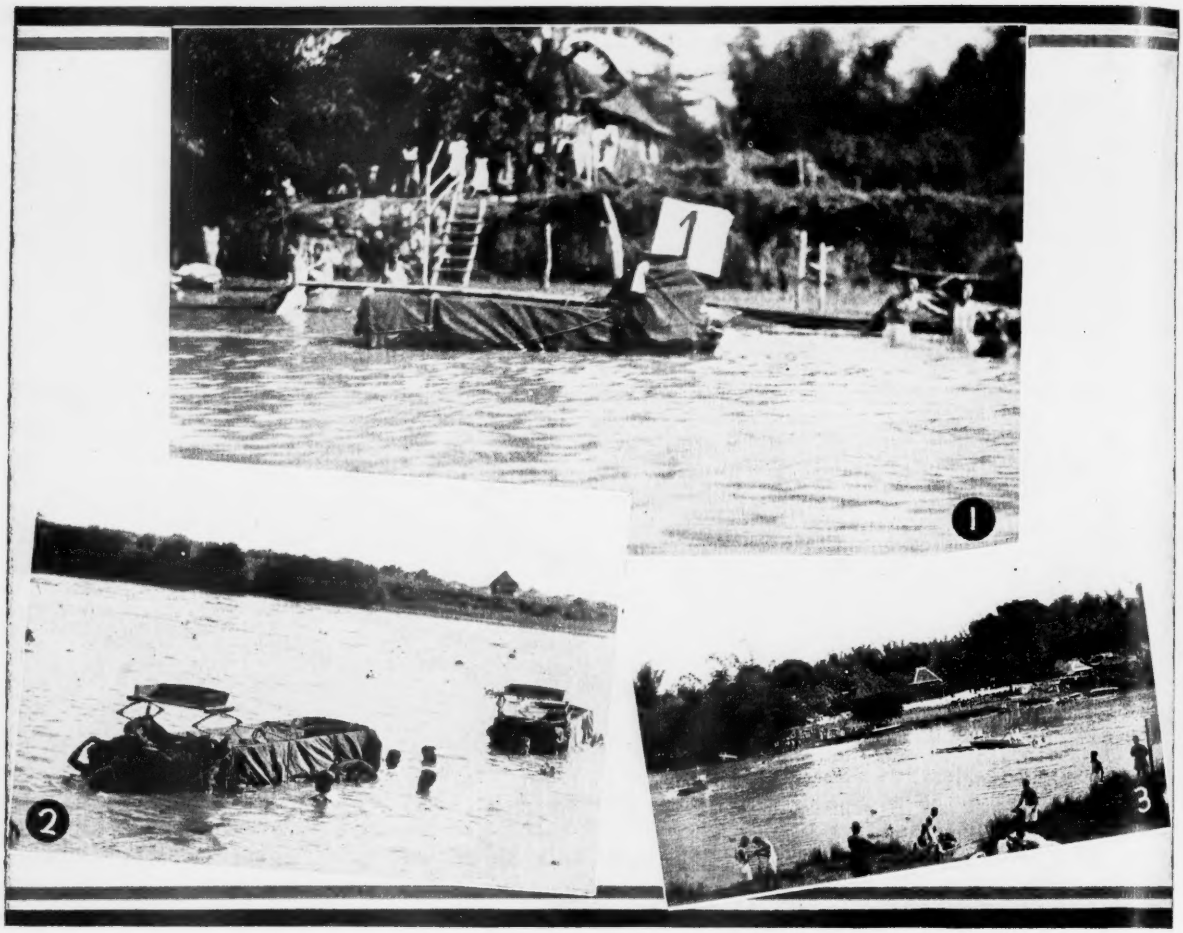
a. A unit whose men and animals are familiar with swimming and floating equipment by methods, somewhat similar to those described in this discussion, need fear no unfordable stream as an obstacle to military operations.

b. That our combat units, as equipped at present (with a trivial addition of rope and canvas), need no other assistance for the accomplishment of a successful stream crossing. *Wooden floats, rafts, boats, etc., can be classed as "luxuries" to be depended upon only where there is much time and when materials are available.* The canvas contained load shown in photographs, Series No. 4, was prepared in 4 minutes and floated across the Pasig River in 8 minutes: the same



SERIES NO. 5

1. Preparing the company heavy property for floating. 2. The 4-line ration and baggage wagon and ½ its load prepared for floating. One company's baggage. 3. Escort wagon load. Organizational property floating in canvas paulin (size 18′ x 38′). 4. Cargo Float Preparation of R & B wagon load. (Company property) 5. Launching the R & B wagon load float. 6. R & B wagon load of a company being floated over stream. Note the individual soldier on top.



SERIES NO. 6.

1. The escort wagon afloat. Canvas wagon cover, wrapped around body, floats the wagon for several hours. 2. Escort wagons floating in mid-stream, 18 feet deep. 3. Right: Escort wagon floated on two bundles of bamboo poles (20 each) lashed to sides of wheels at the hub. Left: Escort wagon floated by means of its own wagon cover.

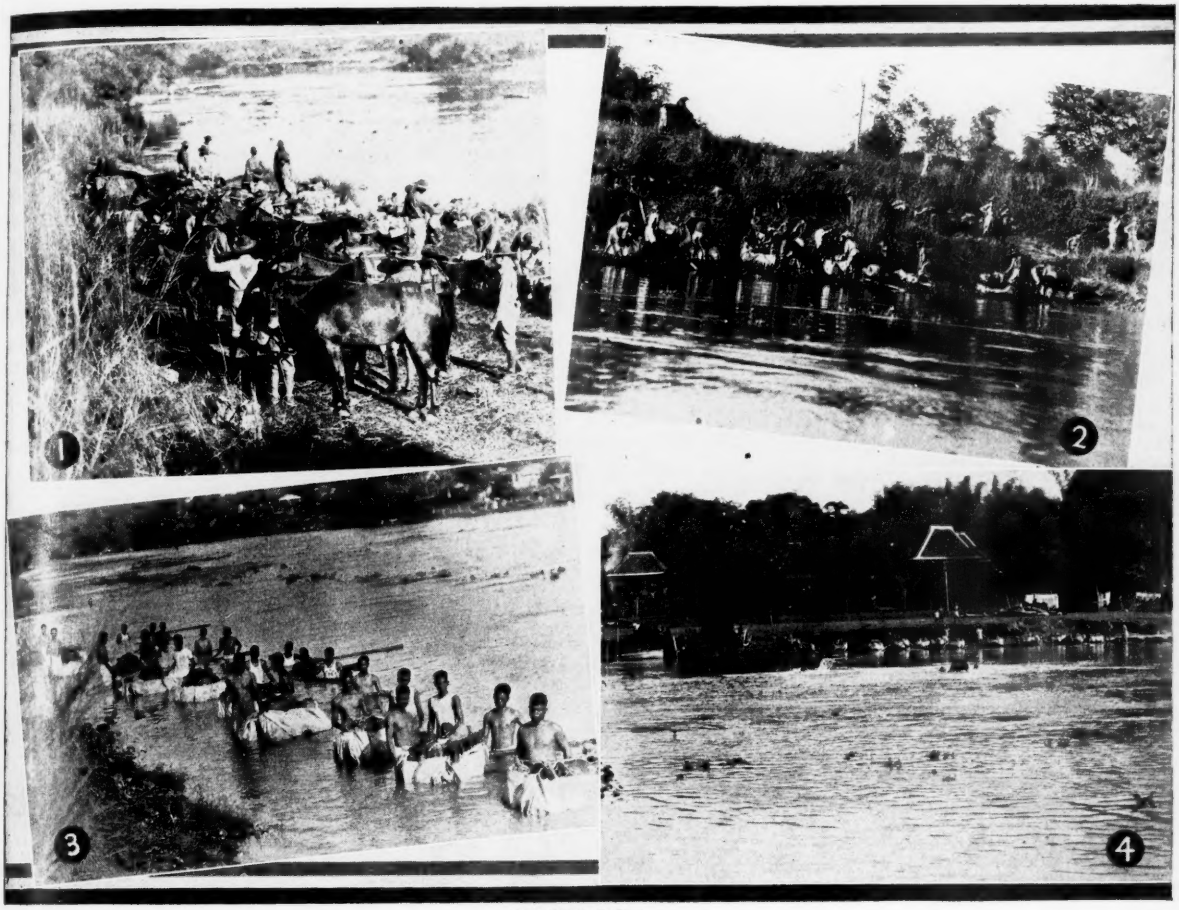
load is also shown on a raft which required (Series No. 9) the efforts of eight men for two hours (exclusive of procuring the bamboo) for its construction and passage across the river.

c. That the battalion crossing operation which required two hours on a 2-company front (or one hour on a 4-company front) would have required some three or four hours for eighty-four men to collect the material (if close at hand); an additional three hours for these men to construct 17 rafts (5 men working on each raft); and finally about one hour for loading the equipment and actually crossing the river with it.

All items considered, eight hours is a conservative estimate for crossing by this latter method. Even this is based upon the supposition that materials are available and that the unit has the skill, tools and rope (or nails) to prepare these rafts. In this connection it should be noted, in the photographs of Series No. 6 that an escort wagon can be floated by its own wagon cover (canvas) and that the ration and kitchen pack mule loads (see photographs in photo. Series No. 4) by means of the manta (canvas) containers (wrappers) or the small canvas paulin.

d. That infantry weapons (machine guns, automatic rifles, rifles, and ammunition therefor), saddles (pack or riding) and ration and unit property loads can be floated by means of shelter tent, manta, or paulin canvas. Further, that the small additions of manta or paulin canvas add very little to the regular loads and that they have the additional utility of covers from sun and damp weather. (See Series No. 11.)

e. That the possible criticism "that canvas wears quickly in campaign" or is easily "snagged" merely begs the question. Canvas can, and must, be kept serviceable; the cargo load, photographs *a* and *b* Series No. 5, was floated in a canvas paulin having 25 patches (see arrows) sewed over its worn spots,—candle grease or lubricating oil will render the patch impervious to water. All of the canvas of a unit will not become unserviceable at any one time; a unit which crosses a stream by using serviceable canvas for its floats will require approximately twice as much time for its crossing when one third of its canvas becomes unserviceable since some canvas must be brought back to the



SERIES NO. 7.

1. Preparing machine gun company floats. 2. Machine gun company completing the preparation of manta floats for all machine gun and individual pack equipment of the company. 3. Machine gun company machine guns and individual equipment prepared to swim unfordable river, two men propelling each load. 4. Machine gun and individual equipment loads of a machine gun company being floated over stream, two swimmers propelling each load.

near bank for other loads. Incidentally, all canvas, old or new is less liable to leak (or seep water) if, before using as a float, it is thoroughly soaked in the stream.

f. That the buoyancy of a float and the method of packing it is a matter of test, therefore all units require some training on the subject. Narrow floats or rafts capsize easily; all floats should be at least from three to six feet wide, if possible, and it is always best to have the center of gravity of the load as low as practicable. For weight carrying purposes, deep, wide floats are more stable than shallow ones.

g. That animals which may at first appear impossible to accustom to swimming soon become used to the water and we can expect them to be trained to the extent that they herd into the water as readily as ducks move in flocks. (See Series No. 12.)

A 15-foot length of rope tied to the halter of an animal with two men at the other end and one man in rear to urge the animal will usually succeed in getting the most stubborn mule or horse to enter the water. An individual swimmer by clinging to a stubborn animal's halter (the long rope being removed once the animal is launched) can pilot it across the stream. A free swimming animal should be selected as a "lead-off" and once across, it should be tied on the far bank in plain view; a cow-bell occasionally jingled from the far side is an inducement for crossing to animals used to herding with the bell. Four or five trips across a stream is sufficient training for individual animals; they should then be crossed by herding; a few men are necessary to start the leading swimmers. In the beginning of herd training 8 or 10 men on the bank with a long rope, surrounding the group, can easily launch the balance of a large herd after a few animals have been led into the water and start for the far bank of the stream.

h. That all training, especially in the early stages, should contemplate adequate safety measures; this may prevent the loss of men or equipment. Whenever training is in progress, boats (motor boats, if available) containing life preservers and several good swimmers should be near at hand. Long ropes with buoyant floats attached should be tied to all loads; these mark the spot of a float which may capsize due to faulty preparation and the long rope serves as a cable by

which the weight may be lifted or dragged to the bank of the stream. Long bamboo poles, logs, planks or life preservers should be used by swimmers of questionable strength. All of the foregoing measures constitute aids to the successful training of the unit.

All companies were required to prepare reports on their experience in developing ways and means for passing over unfordable streams, which,—when approved by the battalion commander,—were filed as a company training document to be used as a reference for future training on this subject.

Such training as has been described herein has particular application to troops in the Philippine Department, especially during the wet season, where units,—perhaps as small as battalions or companies,—may be required to operate independently and, due to the requirements of the situation, at places other than along good roads and over well established stream crossings. These units must depend upon their own ingenuity and devices in order to cross unfordable streams where there are no bridges; they cannot expect to have engineer troops provide the means for crossing.

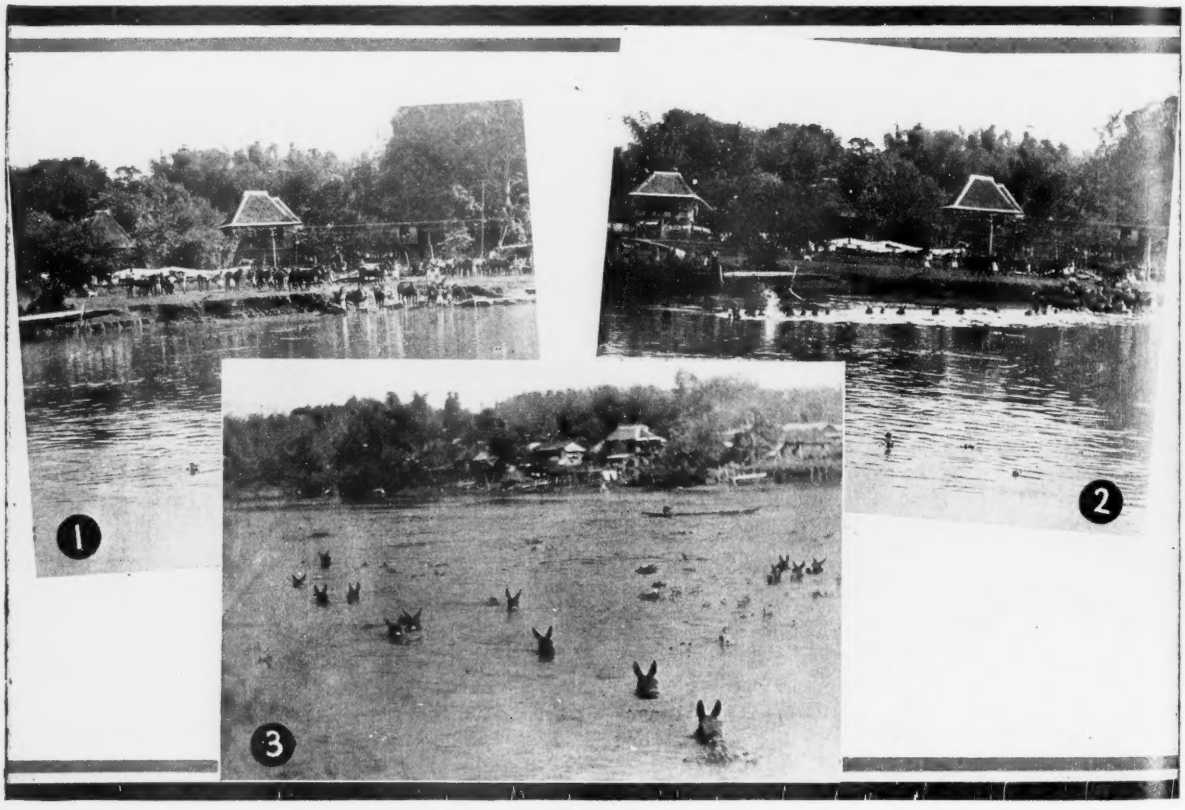
Moreover, it is believed that one of the prime virtues to be desired by a military unit is that power of mobility which is independent of any aid or service not a part of itself. If this be true, stream crossing training has general application to the proper combat efficiency of all combat troops throughout our army, especially the infantry and cavalry.[6]

The well known and accepted texts on the technique of crossing unfordable streams enumerate many suitable expedients and how to construct them but it is the purpose of this discussion to emphasize the fact that combat units (especially covering forces of larger bodies) should know that they can cross these obstacles and "how" to do so without using extraneous equipment, without losing valuable time collecting materials, and for the construction of rafts therefrom. "How true it is," wrote Wellington, "that, in all military operations, time is everything." Any unit which is capable of crossing an unfordable stream by means of its own individual and organizational equipment not only has widened the scope of its maneuverability but at once has minimized the time required for such maneuvering.

It should not be sufficient for combat troops to know how to use special troops (engineers, pioneers, etc.) and bridging materials in campaign; it is proper that such units should know "how" to pass over the unfordable obstacle when the special troops or materials are not available to assist them (the usual case).

Training on this subject may prevent costly errors due to faulty estimates by unit commanders. The

[6] During the 1930 Philippine Division Staff Ride the Staff of a cavalry regiment estimated that it would require 14 hours to move the regiment across a stream similar to the Pasig River near Fort McKinley.



SERIES NO. 8.

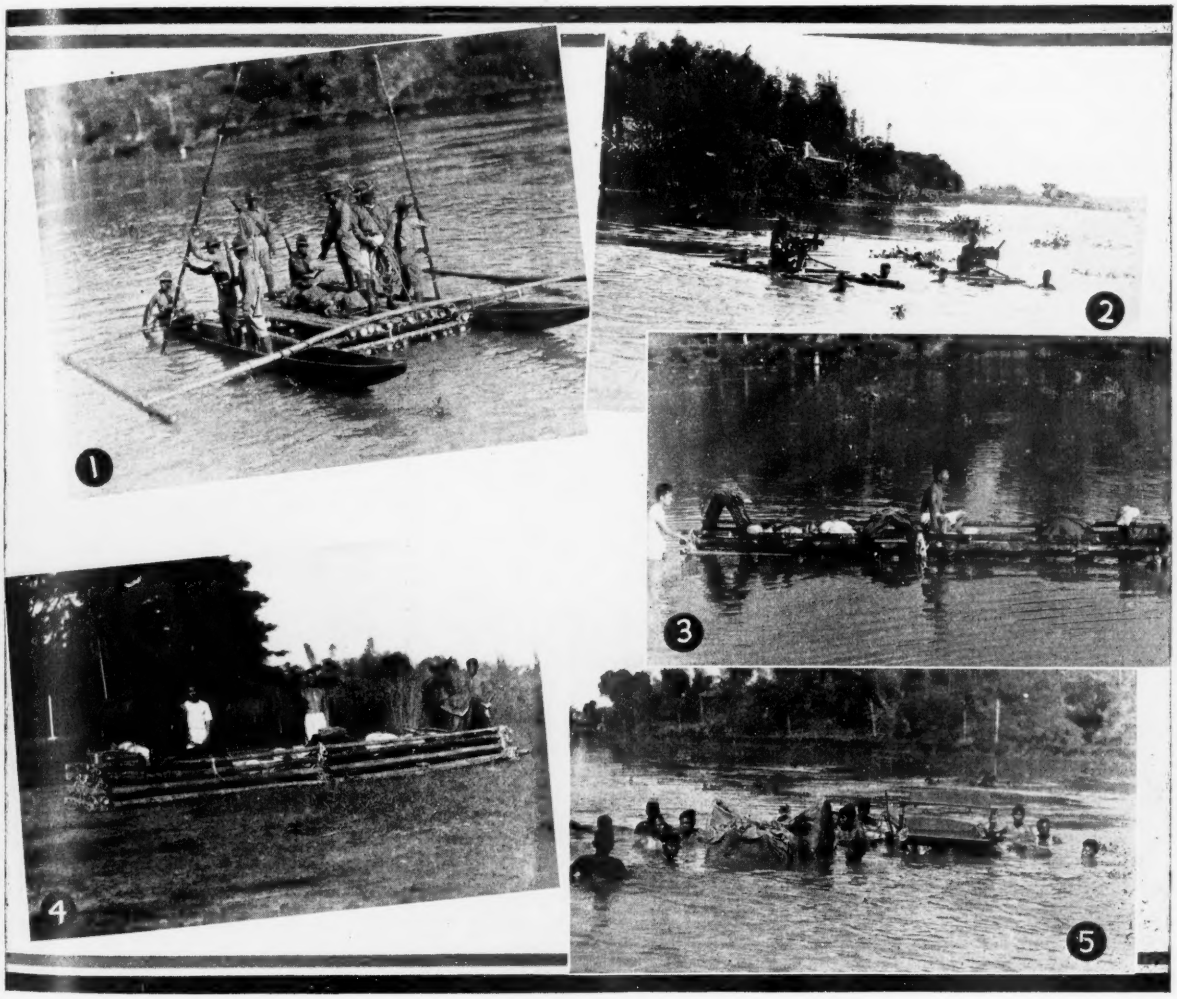
1. The start. 2. The herd approaching mid-stream. 3. Nearing the finish. Mules and horses of infantry battalion returning from the far side of an unfordable stream fifteen minutes after swimming across.

bridge upon which an operation depends may not exist (or be untenable) when the troops reach it (this was the case with Funston at the Quingua, (P. I.) in 1899). Unit leaders should know how to issue appropriate orders; they should be taught to realize that there are no constant rules for stream crossings; that each operation is unlike any other but that all are made easier by both technical and tactical experience resulting from training. Training experiences of other troops and historical examples may serve the unit well which includes river crossings in its training program. Bismark once said, "People say that they learn by their mistakes; I prefer to learn by the mistakes of others."

The situations in which practical methods in crossing unfordable streams may have application are varied and extensive; combat troops may have occasion for their uses both in offensive and defensive operations:

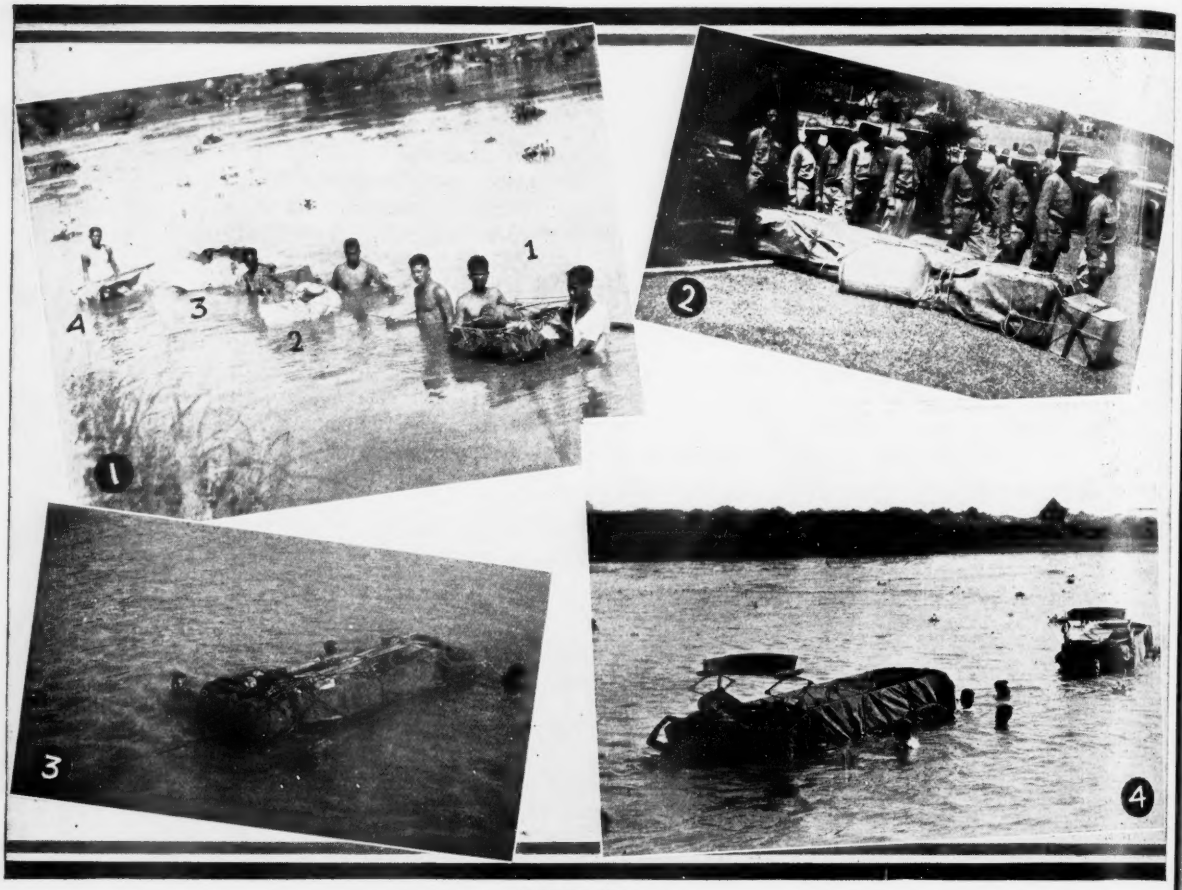
Advance detachments (battalions, regiments or even brigades) sent forward to seize strategic localities may meet with many unforeseen water obstacles; the time required to overcome such interruptions may be the vital element to the successful accomplishment of the mission. All elements of the command should be able to cross the unfordable streams encountered; there may be no secure line of communications in the rear of such unit where baggage, vehicles or animals may be left temporarily.

Covering forces,—screening an advance on a movement to concentration by a large force,—operate to best advantage, especially when opposed by hostile elements, by crossing streams on a broad front; each component unit (platoon, company, battalion, or regiment) should be independent of assistance and capable of effecting a crossing by its own means.



SERIES NO. 9.

1. Banca-bamboo ferry, raft with outriggers, one rifle squad. A heavier load can be carried. 30 bamboo poles, 2 bancas, one hour to cut bamboo and ½ hour to construct. 2. Browning machine gun on bamboo machine gun raft. One gunner and three men propel the raft. 3. Bamboo float for pack loads of three kitchen and ration mules. 4. The loaded raft afloat. 5. Left: Communication (or machine gun) cart floated in canvas 8′ x 10′. Right: Escort wagon floated by means G. I. cans (made airtight with burlap under cover) lashed to the frame of the wagon.



SERIES NO. 11.

1. Fig. 1: One machine gun and two boxes of ammunition in shelter tent: Fig. 2: The ammunition mule load in canvas manta 6′ x 6′. (pack saddle and four individual packs and eight boxes of ammunition) Fig. 3: The machine gun mule load in canvas manta 6′ x 6′. Machine gun, pack saddle and four individual packs. Fig 4: 2400 rounds cal. .30 ammunition (two cases) in 6′ x 6′ manta float. 2. The escort wagon float. Water tight cans give additional buoyancy when weight is increased. 3. The company escort wagon load: 1100 pounds afloat. 4. The escort wagon afloat. Canvas wagon cover, wrapped around body floats the wagon for several hours.

Crossings, forced against hostile opposition, must be protected by covering fire from the near bank of the stream while the first crossing elements accompanied by their equipment make for the far bank. These leading elements must begin operations against the enemy with as little delay as possible; control must be maintained; and arms and ammunition must be kept dry and with the elements to which they pertain.

The elements which arrived on the hostile river bank at the Bag-Bag and at Calumpit (in the P. I. in 1899) were naked and without weapons; and so they remained for from 15 to 30 minutes at the mercy of an enemy which at the particular moment did not act aggressively and so they survived.

Wide envelopments may require rapid stream crossings by swimming and floating combat equipment. Hannibal sent Hanno farther up the Rhone for this purpose in 218 B.C. The occasion to apply these methods may occur on the battle field itself where the enemy has used an unfordable stream, as a natural obstacle, to increase his powers of defense. Such was the case when Wrangel's Prussian Brigade crossed the Saal below Kissingen. The methods of 1932 would have simplified the problem of 1866 if that brigade had been trained in such matters.

Combat patrols or flank detachments may be required to cross unfordable streams at some distance from the main body in order to make a reconnaissance beyond the stream or for security to the main body's crossing. In 1899 General Funston, then a regimental commander, with one rifle company made such a crossing (800 yards to the flank of his brigade) over the Quingua (200 feet wide and 10 feet deep) but his leading elements had to leave their arms and ammunition behind. In the case of such a strong protecting patrol or detachment it is most important to know "how" to cross the present day machine guns, automatic rifles and other necessary equipment by means other than the time consuming method of raft building.

In retreats and delaying actions the rear guard

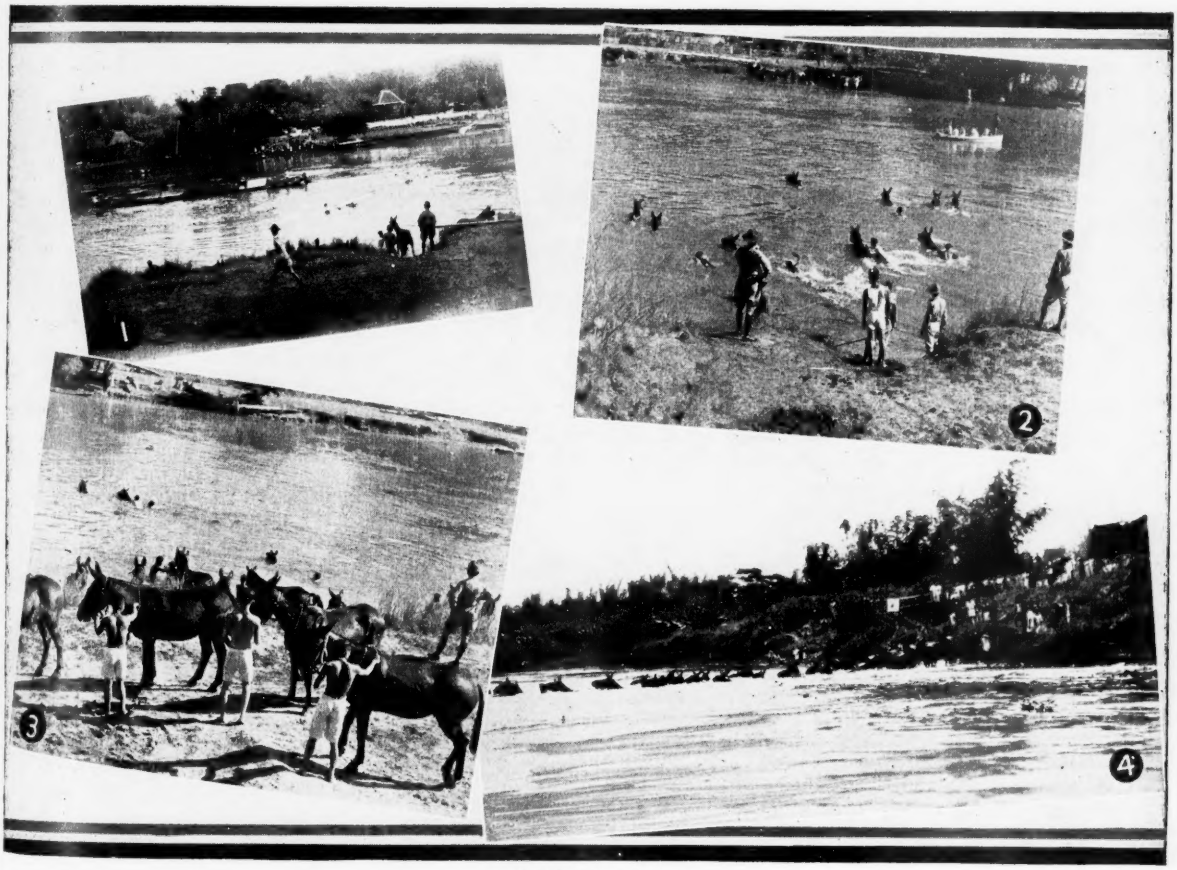
elements may be able to delay the enemy considerably longer if it is known that a regiment can cross the stream in its rear in from two to six hours instead the fourteen hour estimate for a cavalry regiment in the 1930 Philippine Division Staff Ride. In such operations there may be no bridges or boats and perhaps there are few fords and no ferries to be expected. Lee's retreat from Sharpsburg after the Battle of Antietam (in 1862) was confronted with only one ford practicable for the wagon train of his entire army and a few deep fords for men and animals.

Covering units, (particularly battalions or companies) for the flanks of retreating forces may be required to use all sorts of expedients and to move cross country entirely in order to perform the assigned mission and rejoin the main body later on.

The foregoing situations can be satisfactorily met if simple never-failing methods are sought for in a reasonable amount of training on the subject. Troops should know how to operate when confronted with the difficulties presented in this discussion. It is believed that the fear of deep streams,—inherent in most of us,—and the mystery of just "how" to pass a military unit over such an obstacle by swimming and floating can be practically eliminated by methods of training somewhat along the lines suggested herein.

It is hoped that the foregoing will serve to refresh the memory of older officers to whom the subject is not new and will inspire inquisitiveness in the minds of the younger officers in the service; thus serving as a guide to all to show how our present equipment lends itself to advantageous uses when military operations require that deep streams be rapidly crossed.

It is well enough to be satisfied with the old proverb "Do not cross the bridge until you come to it" but we should go further in our troop training and be prepared to cross the stream if the bridge is not there.



SERIES NO. 12.

1. Stubborn animal being towed into stream by long rope tied to its halter. 2. Guiding untrained animals in early stages of crossing practice. 3. Teaching the untrained animal to swim. 4. Mules and horses of an infantry battalion beginning the crossing of unfordable stream. The end of the training period.

The C. C. C. at Fort Knox, Kentucky

By Corporal George Chancellor, 1st Cavalry (Mecz.)

FORT KNOX was designated by Headquarters, Fifth Corps Area, as the only camp in that territorial division to receive the incoming members of the Civilian Conservation Corps. The first orders giving Fort Knox a quota of 12,000 had scarcely been understood when there came the electrifying instructions that the quota would be 28,000. This increase necessitated complete revision of plans, and the peak load estimated for the first week in June jumped from 4,000 to 14,000.

Fort Knox is located on the main line of the Illinois Central Railroad, and the famed Dixie Highway traverses the main part of camp, so transportation facilities were of the best. The camp could accommodate 8,000 men at one time with the following facilities: 1st Brigade and 2nd Brigade cantonment areas: Reserve Officers' tent camp. The anticipated peak load would thus increase the post capacity by about 6,000 men.

The 1st Brigade area was thrown open, and a battalion of the 11th Infantry from Fort Benjamin, Harrison, Indiana, arrived here to assist in the processing of the men of the Civilian Conservation Corps. This organization, with the help of the permanent garrison, opened up the C. C. C. Headquarters and the processing establishment, which functioned smoothly during the whole period of the camp. The processing was done in the largest building in that area. Here each newly arrived "forester" was registered, examined by medical officers and given typhoid and other inoculations. His personal history was taken, and he was assigned to a company for permanent duty. Each conservation company consisted of about 200 enrollees and 2 officers, with 4 enlisted men acting as 1st Sergeant, Supply Sergeant, Mess Sergeant, and Cook.

The 1st Brigade area soon became overloaded, and Tent Camp No. 1 was made ready to shelter about 3,000 men in pyramidal tents, each accommodating eight men. This camp was soon filled, and Tent Camp No. 2 was erected on a new camp site, necessitating construction of sewer lines, piping of water and installation of electric lines. A record of time was made in this camp: it was drained, ditched and made ready for the tents in one day.

This new camp was soon filled, and the 2nd Brigade area, which had been utilized by the personnel of the Joint Antiaircraft-Air Corps Exercises (May 15-27) was placed at the disposal of the fast arriving foresters, now coming in at the rate of 1,500 a day. Tent Camp No. 3 was soon needed; not long after the Reserve Officers' Camp was made ready for occupancy.

The tremendous task of furnishing food, clothing, shelter, and tools for the incoming men required an efficient supply system. Subsistence stores delivered to the garrison on the regular monthly basis were, of course, not adequate to meet the large demands made by increasing population. Large open market purchases were made, and care was taken to select only those products which could be prepared in a minimum of time and which were adapted to eating from mess kits.

War Department instructions authorized Fort Knox to requisition the Jeffersonville Supply Depot (under the jurisdiction of the 6th Corps Area) directly, which arrangement facilitated the solution of our problems.

Excessive heat when the C. C. C. contingent numbered 15,000 made it necessary to put severe restrictions on the use of water. Fortunately, these conditions abated in a short time.

The Post Office Department in Chicago helped out with 50 T-model Fords of the vintage of about 1920. They were turned over to the Foresters but were soon sent out to work camps, and thereafter trucks were furnished directly to the camps from Corps Area Headquarters.

A Regular Army field officer had been put in charge of each area used by the Conservation Corps, but orders were received requiring each departing company to be commanded by a major of the Regular Army. These changes of personnel complicated the administration problem.

It should be realized that the little old routine jobs of the post had to go on as usual; that such work continued as scheduled is a tribute to the Post Quartermaster and his efficient organization. The subject nearest the heart of the Conservation Corps man was food, and to 1st Lieutenants Victor L. Robinson and C. A. Cotton, Q. M. C., go due praise and acknowledgment of the handling of the difficult positions of Mess Officer and Subsistence Officer respectively.

The percentage of A. W. O. L.'s was only about 0.35, and only two deaths occurred. The number of officers on duty here with the Conservation Corps was: Regular Army, 275; Navy, 40; Reserve Officers, 235. The number of separations from the camp was about 1,500 from all causes, mostly on account of infractions of the rules; this is considered a remarkable record.

The physical condition of the enrollees was improved. Gains in weight of as much as 11 pounds in a month were reported.

The morale was very high. An attempt to introduce propaganda literature by the Young Communist League of Toledo, Ohio, failed.

Athletic facilities and equipment were provided by the government, minstrel shows were put on with local talent and a band was formed. Very commendable groups attended religious services.

Contrary to public belief, the members of the Conservation Corps were given no military training beyond the marching in column to and from their work. However, seeing the demonstrations and drills of the First Cavalry (Mechanized) made them wish to learn military drills themselves. When left to their own devices, groups of the young men could be seen performing military movements which were very creditable. They gave the man in uniform, whether officer or enlisted man, the utmost courtesy and, as a whole, were as fine a group of young men as could be found anywhere.

Annual Maneuvers at Benning

By Lieutenant Colonel J. W. Stilwell, Infantry

THERE seems to be a widespread opinion in the Infantry that Benning is a pretty good school. I claim that it must be, because early in the course so may students know more than the instructors. It was in my own case as a student and human nature cannot have changed much in the past ten years. This reputation of the school is keenly felt by the corps of instructors, who are alive to their responsibility of meeting as fully as possible the expectations of our branch. So the trend of the school has been to make everything as practical as possible, to throw out anything that does not make common sense, and to get down to the application of principles on the ground, with the troops there.

With a minimum of theory the student gets out on the ground and begins with terrain exercises, during which artillery, tanks, air, and chemical warfare service begin to take part, and finally at the end of the course, he participates in maneuvers, where the parts are all put together, and where tactics, supply, communications, etc., are all a matter for his decision, and for his alone.

For the past few years the proportion of theoretical to practical work has been constantly decreasing, and the proportion of field exercises to terrain exercises constantly increasing. The graduate of ten years ago would be astounded at the amount of practice field work and actual command of troops that the student now gets.

And what troops they are! Here is a convincing demonstration of what training will do for the American soldiers. The Benning garrison will march at night, through woods, at close to three miles an hour; they will find their way through swamps and thickets in the dark, and be where they are going before you, if you don't watch out. They will leave out a meal or two and laugh about it, and march just as far and just as fast as you say. After watching them for four years, I cannot refrain from expressing the opinion that these are the same types, and just as good, as those who followed Stonewall Jackson up and down the Shenandoah Valley on the run.

A Machine Gun in Firing Position.

This year's maneuvers lasted two weeks. The first week, although one situation led directly to another, an armistice was called each day so as not to make the work over-strenuous, and also to better retain control. Close control was necessary, since certain situations were decided on beforehand, and these situations had to be presented to the student without forcing conditions. The second week the opposing forces were given zones of action and missions, but beyond that were free to act in any way they saw fit.

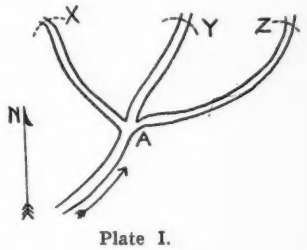


Plate I.

Any officer, no matter who, that attends maneuvers of this kind and does not find something new and unexpected at every turn, must be either very unobservant or very indifferent. All will of course not see the same thing, nor will all agree that any given thing is the most important. However, to many of us it was quite apparent that one very important thing at least was the re-establishment in the minds of the students of the proper balance between theory and practice, between the map and the ground.

Numerous field exercises that led up to the maneuvers had proved to the students that there is a great difference between saying, "I move this battalion from here to there," and actually doing it. They knew that telephones break down, that runners get lost, that orders are misunderstood, that maps are often wrong, that complicated movements always go wrong, etc., etc., but the daily, almost hourly, demonstration of these and many other points over a period of weeks convinced most of them, I hope, that in warfare only the simplest and most direct methods can succeed, and that calm and common sense are more to be desired than much knowledge.

It is at least certain that no better way has yet been found to impress a truth on a man than to let him tie it up in a maneuver. For instance,—a reconnaissance detachment of one rifle company reaches point A (Plate I) from the south, and instead of holding the bulk of the command there, with scouts out on the three diverging roads until the route of the enemy advance is detected, only a small group is kept back

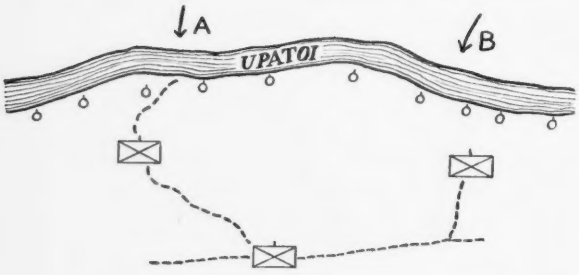


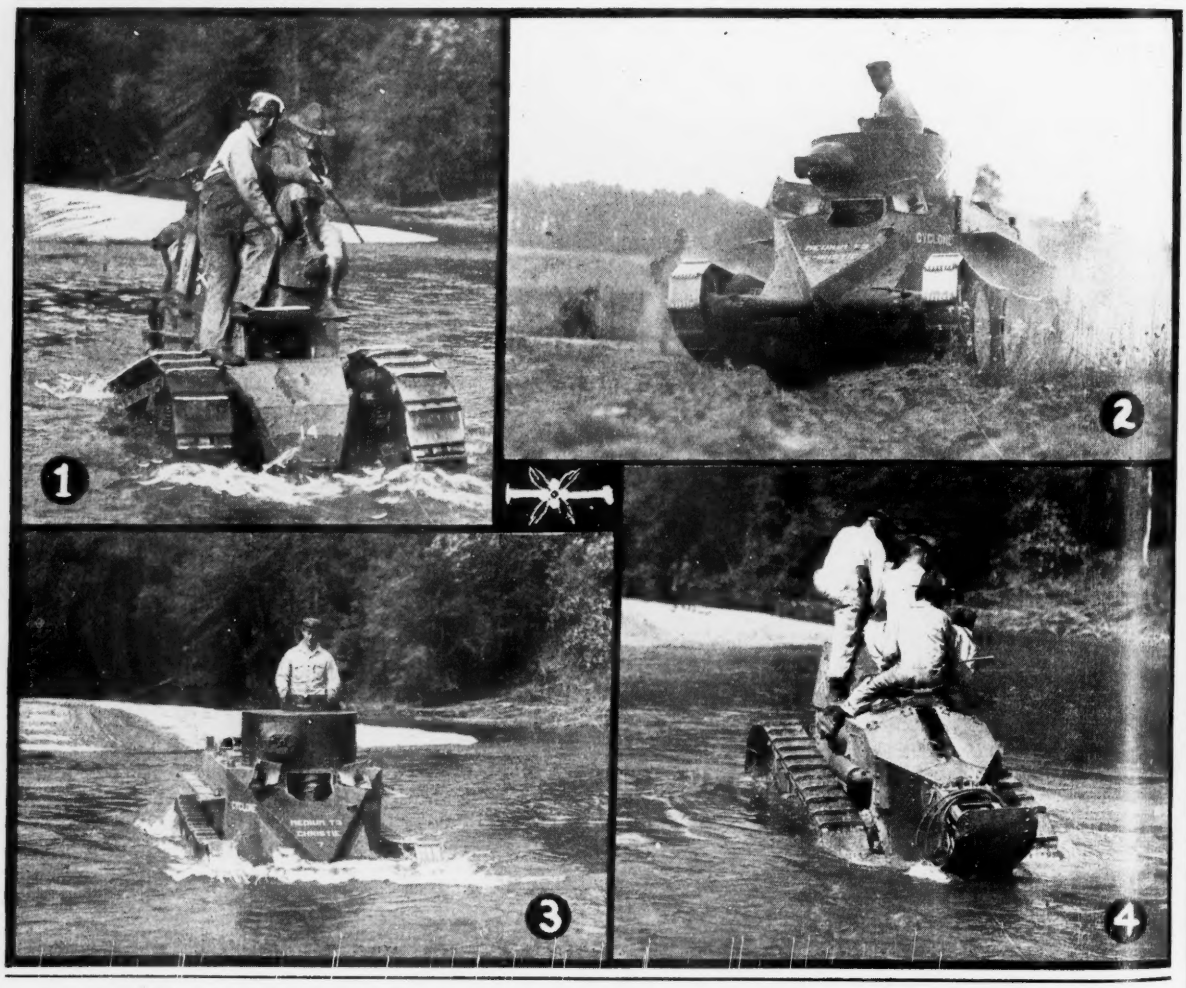
Plate II.

and approximately a platoon is sent out on each road. So when the enemy appears at X, the force there is too weak to delay efficiently. It is too late to get the Y and Z detachments back, and the company gets away by the skin of its teeth. Every man concerned in the action can be trusted not to do that again.

Again, a force south of the Upatoi must be disposed to prevent a threatened crossing. The dispositions are made to perfection,—the bank is thoroughly patrolled, two strong groups placed where they can intervene promptly, and a good-sized reserve stationed where it can support either.

The enemy makes a threat at A and crosses at B. The umpires are wondering how they can reasonably let the attack succeed, because they have more grief arranged on the south bank, but the defense relieves the situation by doing nothing. It couldn't happen on the map, but it does in practice. The reserve is not moved until the company opposite B is overwhelmed, and then it is too late. We may be sure that the commander and staff concerned will not again jeopardize success by clinging too long to a preconceived idea that a crossing would take place at A. These simple evolutions do not seem like much of a trick on paper and in diagram, but try them on your own piano some time and see if they aren't a problem.

There is another lesson in this same little action. The attackers came down from the north and saw the Upatoi on the map. Instead of looking at it on the



1. A 1917 light tank crossing the Upatoi. 2. A fast one gets away. 3. The Christie makes it easily. 4. The veteran of 1917 goes back for more.

ground, or even feeling of it, the presence of bridge material, (foot), added to the existence of a stream, naturally suggested a bridge, and they held up the foot-troops until a bridge was put in. Any one of them who might have been out fishing would have stepped right in and waded across, but the map-room influence dominated their thought until it was almost too late. How well this practical demonstration of the uses of reconnaissance sank in was plainly shown a day later, when the southern force came back, and in the dark pushed over at several places without any trouble or loss of time.

We never lose a unit on the map. We can move it around freely and always pick it up again just where we left it. On such ground as exists at Benning, where most of the terrain is jungle, it is not quite so easy. The northern force, which has crossed the Upatoi and developed the hostile position south of it, decides to attack with two companies in assault, echeloned to the right rear, and one in reserve back of the leading company. The attack fails completely and soon after the jump-off.

The battalion commander wants to pull back the assault companies, one on either side of the reserve, and so orders. Within thirty minutes no one knows where any one of the three companies is, although the command post is less than 600 yards back of the front, and although the orders were received and understood, and the movement properly started. It is close to two hours before the companies are again in hand and put where they are wanted. These things are mentioned to invite attention to what in the field prove to be the more essential things.

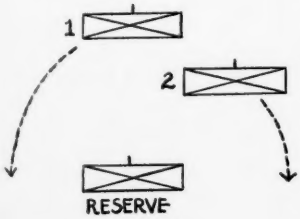


Plate III.

Motorized machine guns and motorized mortars were used in these maneuvers, and as one result the necessity of all-around security was strongly impressed on all. We can no longer put out a screen across our front and feel safe to move forward. Fast motors will appear from nowhere on our flanks and in our rear and make us pay heavily for our mistake. Manned by members of the company officers' class, these vehicles caused many embarrassing moments to commanders who were thinking in terms of front only, and proved that simply because no enemy is now in an area ten miles square, that is no reason why he won't be there in an hour from now.

The Tate mount for the mortar caused considerable favorable comment. If we can have in the Infantry battalion a few such vehicles, with enough carrying capacity to ease our minds about ammunition supply, then the question of close support for the rifleman will not be nearly so acute.

And this brings us to the matter of artillery support. With all due respect to the effectiveness of light artillery in open country, or for that matter, wherever an observer can see a target, there is no

1. The umpires get together on a knotty problem. 2. Modern communications—an airplane picks up a message from the ground forces. 3. The improved Tate mount for mortars. 4. Loading the Tate mount for a fast getaway.

question of its value to a doughboy. But there are types of country, such as the Fort Benning reservation, where the effectiveness is cut down tremendously by the heavy woods. Without planes to spot for it, the artillery cannot do for the Infantry what it is capable of doing under better conditions.

When a unit as good as the 83rd F.A. can find an opportunity to get off only three rounds in two days of maneuver, even granting that the student commander probably missed some opportunities, then the Infantry had better ponder the question a little. In the entire two weeks' period of these maneuvers, the opportunities for observed artillery support were very few and far between.

If we concede an accurate map of suitable scale, the artillery will give us good results from it, but we cannot count in the general case on anything better than the geological survey map, and it won't do to fire from that. There would be too much hard feeling aroused in the Infantry-Artillery team after the first few salvos. The Infantry has simply got to get something that they can count on for quick action up front in thick country. Mortars supply the answer, and a motorized mortar indicates the solution of the ammunition supply. With six or eight Tate mounts on light chassis to a battalion, the battalion commander will have a powerful help in time of trouble.

We should not sit by and complacently accept what is, when it is plain that something is the matter with it. Let us yell for what we want, and if we do not know what we want, let us experiment a bit until we find out. I believe we want a greatly increased quota of mortars, with possibly a small one like the Spañish 50 mm. right in the Infantry company. With good light machine guns and plenty of mortars the Infantry could go places from which they are now barred by the immobility of the heavy machine gun and the comparative slowness and uncertainty of the response from the artillery.

The arrival of the Tank School and its incorporation in the Infantry School as the 5th section has been a fine thing for all concerned. The tanks were very prominent in the maneuvers, and a whole company of lights were used continuously. I claim it to be a feat worthy of note when 24 of these veterans can be moved all over Fort Benning under their own power, cross streams, and always reach their destination, with only one breakdown that couldn't be handled in the field.

The tank class operates both slow and fast tanks, and we are now beginning to find out some of the things we can expect from them. On several occasions a pair of fast attacks operated together in executing limited thrusts on opposing troops. One of them would get the attention of the enemy from the front, while the other, making a rapid detour, would cut in on flank or rear. They would then get back quickly before anti-tank weapons could get into action. Such action by fast tanks is, to say the least, going to be very disconcerting. While the slow tanks were in general very well handled, it is more and more apparent that improvement in anti-tank defense will soon make it impossible for them to operate without very favorable conditions, such as good cover, thick weather, or efficient smoke. Speed is the thing, and the slow tank is out of the picture.

To anyone who has the pleasure of laboring on the faculty of the Infantry School, it is most heartening to check up on results at the end of the year and find the general average so high. While many mistakes are of course made, as they would be made by the instructors themselves, after a couple of weeks of continuous field work the students shake down and perform like veterans. In the midst of a night advance, with a battalion in confusion, someone usually steps up, gets the crowd together, and with his mind on the main issue pushes along and brings order and success out of chaos.

Under the pressure artificially created by a corps of umpires who know all the facts in the situation, a commander, with his back to the wall, keeps his head and takes some common-sense action that saves his command. In a rapidly-changing situation, where a change of command has just been made, the staff rallies round and on short notice a team emerges to function as if they had been together for months. All these things and many others occurred during this year's maneuvers to prove again that we are at least on the right track and that Benning can hold up its head, and for its justification merely point to its graduates.

The Civilian Conservation Corps

By Major John J. Bohn, Cavalry

THE transformation of the Civilian Conservation Corps from an idea into a fact has been a remarkable event. A new team is playing a new game in the United States with results which may vitally affect the future. The Department of Labor, the War Department and the Interior Department have been brought together under the Chief Executive in efficient cooperation.

Quite naturally the three great government departments mentioned above had no unanimity of opinion as to the best method of obtaining the results desired. As things developed, the War Department was found to be in possession of the only agencies capable of assembling, transporting and supplying the large number of men involved, as well as of administering the camps. With these matters thus covered by the War Department, the Department of Labor's part was to indicate the quotas to be taken and that of the Interior Department to control the men in their forestry work.

In 1917 an old theory exploded. That theory was based on the idea that in the event of a national emergency, a million men would spring to arms overnight forming an invincible army capable of immediate action. Because of this theory it required thirteen months and a national draft act to place two divisions in action on the battlefields of France.

The Department of Labor by making full use of the army recruiting services, in 1933, in three months has assembled and turned over to the Army 275,000 men, the equivalent in man power of approximately 14 divisions, although restricted by limitations as to age and dependents of the men enrolled. This remarkable achievement was accomplished without the aid of excitement, hysteria or much help from the press. Labor has not been disturbed, 250,000 families have received material aid, the burdens of countless communities have been lightened, and a large bloc of unskilled labor, otherwise hard to place, has been given employment beneficial to the country. The contrast between 1917 and 1933 is startling. The Department of Labor has quietly and efficiently accomplished a task of the greatest significance. A field of future possibilities has been opened that should never be forgotten. The idea of the Department of Labor as a potent factor in a national emergency requiring man power and maintenance of industrial equilibrium at the same time has been given a new meaning.

Many years ago, when the present governor of Pennsylvania was Chief of the U. S. Forest Service, men wearing the pine tree badge on their flannel shirts looked over vast districts and made plans to benefit the future generations of this country. These plans were dreams to a nation too busy making money to think of the future. The forests of France and Germany and the lack of forests in China were significant facts only to a small inconspicuous group of men. The probability of sufficient labor to transform plans into facts before necessity made such action mandatory was beyond the imagination of even the most hopeful. Millions of feet of good timber burned every year, water-sheds were denuded to the detriment of cities and farms, whose people but dimly guessed the cause, insect pests multiplied, erosion continued unchecked, a vast playground remained inaccessible through lack of roads and trails. Labor has suddenly been made available to correct these adverse conditions. The Forest Service and Department of the Interior have selected 1,330 camp sites, some in every state of the union, except Delaware. Work has begun on countless miles of telephone lines, connecting fire observation towers and scattered ranger stations. Fire lanes will be cut and cleared, first line defensive works in the annual fight against fire, roads and trails will be built, permitting access to areas hitherto explored only by the timber cruiser. Insect blights and contagious diseases of timber will be checked, and erosion of denuded areas will be slowed. The Department of the Interior has undertaken the task of educating the conservation corps, showing it how and what to do, turning into useful work the power of thousands of young men.

This is not easy; a skilled woodsman is every bit as hard to make as a skilled soldier. The work of big muscled country boys is not comparable to what may be expected from the city youth. Results will be slow; camps will differ in output according to personnel; six months will barely scratch the surface of what there is to be done. However, before it is over, the Forest Service will have a comprehensive foundation laid for future work, and work in the forests may continue. Two or three years could be very profitably spent on our public lands; the expenditure would return to the country dividends in many ways too extensive to enlarge upon here.

The important facts to remember are that the Forest Service was and is able to give employment to vast numbers of men in times of emergency; that this employment will benefit the men employed in mind and body and the country as a whole; that the United States has in the public domain a field of employment large enough to make an actual non-productive dole unnecessary, even in the hardest times.

The War Department and the Army have performed a task beyond their capabilities before the war. Lessons learned during and after the war have been applied. Education and organization have been tested and found equal to the responsibilities imposed by a new and strange situation. The value of war reserve stocks has been demonstrated.

The General Staff has certainly justified its existence as a planning agency. Senator Couzens's bill of January 10th providing for Army care of 80,000 indigent

youths gave the War Department sufficient warning to alert the General Staff, causing it to undertake studies to meet such contingencies. The Chief of Staff as early as March 9th directed that estimates and regulations be prepared covering reception, organization and equipping of units of unemployed men.

By March 25th the Corps Area Commanders had received warning orders outlining the probable scope and magnitude of the task allotted to their Corps Areas. On April 5th actual missions were assigned and orders given to begin enrollment. On April 7th the Labor Department began sending men to the Army. As first planned the Army's job was to receive the men, enroll them, start their records, organize them into units, equip them, transport the units to railheads, turn them over the Forest Service or other designated agency. This accomplished, the army was to go back to its regular job of national defense.

It took just one day to find that this plan would not work. Matters of supply in the field, transportation, sanitation, and discipline cannot be lightly undertaken by men untrained to the task. Someone in authority discovered the Quartermaster Corps, and the Army had another job. Shortly thereafter the Army Chaplains got their campaign hats down from the top shelf of the closet, and officers of the line began to say goodbye to their families. Each Corps Area became a communications zone forthwith. The General Staff went to work on a new set of regulations, and in a remarkably short space of time furnished the Army a good working guide for its operations.

Much remained to be done, however, and the three big departments had not settled down to team play by May 10th. On this date 52,000 men were enrolled, and 42 camps were established. Men were coming in at the rate of 1,530 a day, a rate which promised to fall far short of the 250,000 figure set by the President.

In order to reach the objective set, it was apparent that approximately 222,000 additional men should reach the camps by June 7th. This meant a daily rate of 8,540 men, a greater average reception than that experienced in the World War. The question of prompt and sufficient supply was critical.

It was evident at once that peace time restrictions on transportation, war stocks, contracts, and purchases would have to be lifted. There was no time for papers to travel from office to office collecting indorsements. Money was needed. Authority would have to be decentralized. There would have to be a high command to make decisions on controversial matters. All hands got together, definite orders were issued, restrictions were lifted, and the Quartermaster Corps and the Corps Areas proved equal to the task.

The Department of Labor stepped up reception from 1,530 men per day to 13,843. The Forest Service laid out camps and revised plans, the Q. M. Corps furnished transportation, food and clothing, and the Corps Areas, Posts and Stations gathered in the men, organized them and sent them to the woods. By July 1st the job was done, but the task of feeding, working and taking care of this vast army continues.

The lessons learned by this great operation will be of inestimable value to the country when their full significance is understood.

The facts already established have been too great in scope and possibility for the press to grasp or the people to realize.

The making of the Civilian Conservation Corps has demonstrated that the powers of the great departments of our government can be coordinated and directed toward a common goal, although normally engaged in widely divergent activities.

A greater problem than the Conservation Corps now confronts the Government—the application of the National Recovery Act. This problem can be solved only by the closest cooperation of all the agencies of government. Conflicting department interests and petty personal beliefs will have to be thrown overboard if success is to be attained. By application of the principles learned anew in the launching of the Conservation Corps, this great experiment will succeed. Unless there is complete and sensible cooperation directed by high and disinterested authority, the plan will fail.

A great practical opportunity to test army organization has demonstrated the soundness of this organization from top to bottom. Criticized by industrialists, other government departments, and even by members of the army, the task just performed has demonstrated the integrity, flexibility and efficiency of the Army system and Army personnel. It has been discovered that the Army and Navy, by reason of their education, training and organization, can handle any problem involving control, transportation or supply of enormous numbers of people with minimum cost and maximum celerity and are as useful for this purpose in peace as they are in war.

That the present uneconomical distribution of the Army in scattered posts throughout the country is a tremendous asset in any national emergency involving mobilization for internal or external purposes.

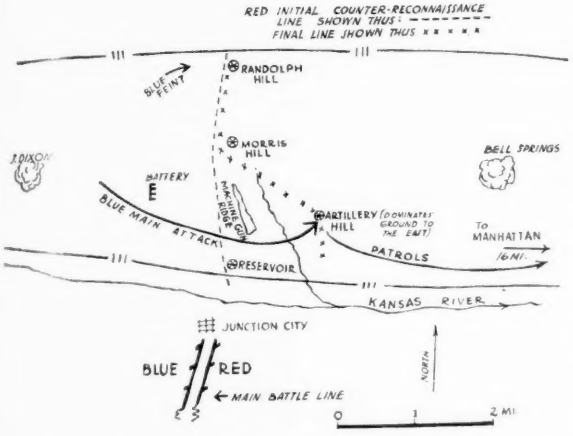
In conclusion it must be said that there is another side to this picture. How was the problem handled by the scattered posts and stations which actually performed the work and carried the load?

We know that over 5,000 Army and Navy officers are in the field with this civilian army; we know that the Quartermaster Corps is purchasing $85,000 worth of supplies daily, and that this daily supply is reaching 1,330 camps situated in out-of-the-way places; we know that our war reserve stocks of clothing and equipment have been depleted and that 6,000 of our best enlisted men are helping this project to success. We may rest assured that the health, morale and general well-being of this great army is in the hands of a class of men whose good judgment and common sense is not surpassed by any similar group of men in the world, the junior officers of the American Army.

How they met and are meeting the requirements of this great undertaking is told by an eye-witness in another article in this issue.

NOTES FROM THE CHIEF OF CAVALRY

What Would You Do in a Situation Like This?



COLONEL Ringbohn smoothed his blouse over his chest, admiring the considerable group of ribbons which told of battles and campaigns past. No question now but that there would soon be another ribbon in token of the successful accomplishment of this day's work. Colonel Ringbohn felt expansive, and very, very much pleased with himself. His had been the first tactical mission of this new campaign, and he had accomplished it in full. Turning to the liaison officer from the Blue GHQ, who had just arrived, Colonel Ringbohn began to explain the situation.

The main Blue and Red forces had been stabilized along the line: Junction City to the south, for some time. North of the Kansas River there had been no fighting until today when Ringbohn's regiment with a horse battery attached, having been detached from the main Blue Cavalry force on the south flank of the battle line had been sent on a reconnaissance mission to determine whether or not there was any truth in the vague reports that the Reds were concentrating a division in the vicinity of Manhattan with a view to subsequent movement against the Blue north flank. A zone in which he was to conduct his reconnaissance had been given Colonel Ringbohn as shown in the sketch.

"Last night," continued Colonel Ringbohn to the liaison officer, "my outfit bivouacked near J. Dixon, having marched in from the west. My patrols quickly developed that Red cavalry was strung along the line: Randolph Hill—Morris Hill—Reservoir. A captured prisoner informed me that opposed to me was the 12th Red Cavalry, obviously on a mission of counter reconnaissance. As you know, the Red cavalry regiments are the same strength and organization as ours. We could not penetrate the screen with patrols and could not locate the Red reserve, although subsequently we learned that it consisted of about one squadron and was held initially at Bell Springs.

"Early this morning I attacked in the direction: Reservoir-Artillery Hill, in conjunction with a feint against Randolph Hill. The main attack was closely supported by my battery. We took the Reds by surprise, and our attack went through the Red groups holding the Reservoir area with little resistance. In a few minutes we were in possession of Artillery Hill, having penetrated the Red counter reconnaissance line. We still had not met their reserve, however.

"From Artillery Hill I dispatched patrols to Manhattan to determine whether or not there was a large concentration taking place in that area. I then withdrew to the line of Machine Gun Ridge, as a more easily defended position, and awaited the action of the Reds. I felt sure that some of my patrols would be able to get back with the information I desired by slipping through the now disorganized Red line.

"The Reds reoccupied Artillery Hill but did not attack. We held Machine Gun Ridge with the command disposed as you now see it. In the course of an hour or so two of my patrols worked their way back with the information that at least an Infantry Division is in the Manhattan area."

Colonel Ringbohn having thus tersely summed up the situation could not help adding,

"And a very neat little operation it was."

Both Ringbohn and the liaison officer were startled at this point by the action of an oddly marked bird which had been observing them from a nearby bush. This bird flapped its wings, stretched its neck and uttered a cry which sounded peculiarly like a horse laugh!

"For Heaven's sake! What kind of a bird is that?" exclaimed the liaison officer.

"I am Tictac, the tactics bird" replied the creature, "and I give you the horse laugh because I wouldn't have done what Colonel Ringbohn did." Both the liaison officer and Colonel Ringbohn stared at the bird in amazement. Ringbohn was the first to recover from his surprise and demanded of the bird.

"What Would You Have Done?"

(For Solution Turn to Next Page)

A Solution

"It is true that you accomplished your mission, Colonel," the bird began. "You have discovered that the Reds are concentrating a large force in Manhattan. Of course, this force will move west before long and constitute a very serious threat to the left flank of the Blue main army. It should not be difficult for you to anticipate the next orders you will receive from Blue GHQ. You will undoubtedly be told to delay the westward movement of the Red Division until the Blues can get something up here to oppose them with. Now delaying infantry with cavalry is a relatively simple task up to a certain point, but delaying infantry which has a cavalry force nearly equal to your own is something very different.

"When you took Artillery Hill you had created a situation of which you should have taken immediate advantage. To begin with, you had combat superiority in that you had a battery and the enemy did not, and also, your command was much more concentrated than were the Reds, who had to maintain small groups over their entire counter-reconnaissance line. You had possession of ground that dominated the enemy rear area and from which you could threaten it.

"I agree with your idea of sending some patrols out from Artillery Hill to the Manhattan area but I cannot agree with your action of retiring to Machine Gun Ridge and assuming a defensive attitude pending the return of your patrols. On the contrary, you should have sought out the enemy reserve and attacked it. You could not ask for a more favorable situation for giving the Red cavalry a sound drubbing. In my opinion, you had the opportunity to completely defeat it. In so doing you would have enhanced the chances of your patrols getting to Manhattan and back and above all you would have paved the way for a successful delaying action against the Red infantry by the elimination of the Red cavalry.

"May I suggest, Colonel," resumed the bird, "that you examine any future tactical decisions you may make by asking yourself these questions:

'Does my decision accomplish the mission?

'Is it as simple as may be in the circumstances?

'Does it favor the future employment of my command?' "

The bird stood silent for a minute and then flew away to the north, occasionally emitting its raucous horse laugh, which sounded very much like "Raspberry." (Department of Tactics, The Cavalry School).

Cavalry to Retain Horses

COMMENTING on recent articles appearing in the press, Major General Guy V. Henry, Chief of Cavalry, U. S. Army, made the following statement:

> There has appeared recently in the public press a statement that the War Department has asked, under the President's Industrial Development Program, for money to motorize the Cavalry of the United States Army. Such a statement is misleading. It is not the intention of the War Department to provide motors for the transportation of the individual trooper of Cavalry regiments. He is to remain a mounted soldier as heretofore. If the money asked for is made available, it will be used to substitute light trucks for the mule drawn wagons in what are technically known as the Field Trains of Cavalry as well as of Infantry regiments. Such a substitution will be in the interest of general efficiency.

Motor Trucks for the 2nd Cavalry

ON June 30, 1933, 20 Chevrolet 1½ ton motor trucks were delivered to the 2nd Cavalry. This is an event of great moment to the Cavalry. The delivery of these trucks will provide the means of conducting a test which the Chief of Cavalry, since 1929, having recognized the great importance to the Cavalry arm of such a test, has continually endeavored to carry through.

Since the World War the mobility of the fighting elements of our Cavalry has constantly increased. This increase in mobility can be attributed mainly to three things: general improvement in horsemanship and care of animals throughout the entire Cavalry, due to the influence of the teachings of the Cavalry School; better quality of Cavalry horse furnished by the Remount Service; and the improved Phillips pack saddle, which makes it possible for us to transport our weapons over long distances at the gaits of the mounted trooper.

The 20 1½ ton trucks now assigned to the 2nd Cavalry are being given an extended service test under the supervision of the Cavalry Board to determine whether or not a light motor truck can replace the mule-drawn escort wagon of our present regimental field and combat trains.

All twenty of these trucks are equipped with transmissions permitting eight speeds forward and two in reverse. Ten of the trucks have standard tire equipment (duals in rear) and, in addition, are provided with traction devices to be applied to the rear wheels to give traction under difficult conditions. The other ten trucks are equipped with 9" × 15" (doughnut type) tires (singles in rear) with no traction devices provided other than skid chains. It will be noted that two types of tire equipment have been provided in this experimental train. The standard tire equipment, duals in rear, with traction devices, has been used with a great deal of success on the Ford-drawn 75 mm. batteries. The doughnut type tire equipment has been tested on a similar type truck by the 1st Cavalry Division and has given excellent satisfaction in the deep sand and rutted roads characteristic of the Texas border.

Armored Cars

THE 1st Cavalry (Mechanized) at Fort Knox, Kentucky, has been furnished its complete quota of twenty new armored (reconnaissance) cars. In these vehicles there has been installed either the long or short range radio equipment that has been

under development for the past two years. The sets operate as telephone or telegraph. Successful operation, particularly of the long range type radio, in the new vehicles is a most important step in the tactical handling of this command. It is intended to issue the long range set to Cavalry Brigade and Division Headquarters. When these plans are completed, both horse cavalry and mechanized cavalry will have similar radio equipment, the high-powered set just referred to for the higher echelons and the short range in pack for horse organizations and for inter-organizational communication in the mechanized regiment.

The regiment has also lately been furnished four newly-constructed half-track cars, which will undergo extended service test as carriers for machine gun personnel of the machine gun troop and scout troop.

The latest model of Cavalry armored (reconnaissance) car, a 4-wheel, 4-wheel drive vehicle, is undergoing proving ground test.

Machine Guns

AT the Cavalry School, Fort Riley, Kansas, one of the several important investigations now being conducted is that of giving the new large caliber air-cooled machine gun a thorough service test. This weapon, successfully developed during the past two years, fills a distinct need in the Cavalry. It is capable of firing armor-piercing ammunition of sufficient power to penetrate the armor of hostile armored vehicles likely to be encountered by our Cavalry. Its design makes it easily adaptable for installation in armored vehicles and in horse pack, thus enabling both horse and mechanized units to protect themselves from hostile mechanization. It is put into action on the ground from horse pack in a matter of seconds.

During the month of June, Major J. C. Woodberry, Ordnance Department, representing the 1st Cavalry Division, and Captain T. J. Heavey, 2nd Cavalry, representing the Cavalry Board, participated at Aberdeen, Maryland, as members of a joint branch board which was concerned with test and study of proper anti-aircraft mounts and means for defense against low-flying attack aviation. These tests showed most conclusively that, for such fire with machine guns, anti-aircraft sights are not necessary and that tracer control is the most effective means.

On completion of these tests, the feeling of the Cavalry about this matter was the same as that of the Infantry and Field Artillery, that is, hearty approval of the simple and efficient mount modification for the 1917 machine gun designed by Captain S. H. Negrotto, infantry. Adoption of this all-purpose cradle will give the weapons of the Cavalry machine gun troop the maximum of flexibility for aerial as well as ground fire. The interests of the Cavalry in these problems were ably handled by Major Woodberry and Captain Heavey. These officers deserve much credit for the excellent firing results obtained during the tests by the Cavalry light machine gun and for their past initiative and ingenuity in developing A. A. defensive means for Cavalry.

Motor Trucks for Troop A, 1st Armored Car Squadron

TROOP A, 1st Armored Car Squadron, has recently been furnished six 1½ ton 4-wheel, 4-wheel drive Marmon-Herrington trucks for service test. These trucks performed well during a practice march from Fort Bliss, Texas, to Douglas, Arizona, and return, July 12-15, 1933, and also during a 630-mile march from Fort Bliss, Texas, to Terlingua, Texas, and return, August 3-11, 1933, when Troop A, 1st Armored Car Squadron convoyed the 1st Squadron, 7th Cavalry, Major John A. Robenson, commanding, *porté* in the trucks shown in the frontispiece of the May-June CAVALRY JOURNAL.

On both marches the trucks successfully negotiated varied terrain ranging from paved highways to trackless desert. The terrain encountered cross-country was in general deep, loose sand with gentle grades. Travel on unimproved roads was in general through hilly and mountainous country with many very steep grades.

Average operating speeds were as follows:

On main highways, 22 m.p.h.,
On unimproved roads, 16 m.p.h.,
Cross-country, 10 m.p.h.

Radio Equipment

THE Cavalry Board is testing a one-horse load radio set containing both telephone and telegraph features. This set is very similar to that described as the short range set in the paragraph headed "Armored Cars."

Tests

DUE to Civilian Conservation Corps activities, it has been necessary for the present calendar year to dispense with the Goodrich Trophy Training Test for Cavalry troops and the Leadership Test for Small Cavalry Units (platoons).

PROFESSIONAL NOTES *and* DISCUSSION

Effectiveness of Ground Small Arms Antiaircraft Fire

By Col. Bruce Palmer, Cavalry

IN CONNECTION with the article, "The Browning Light Machine Gun," by Lt. C. L. Ruffner, 5th Cavalry, published in the Jan.-Feb., 1933, issue of THE CAVALRY JOURNAL, attention is invited to the following:

Lieutenant Ruffner states, "the percentage of hits * * * is very small, this having been shown by tests recently conducted at the Cavalry School. * * * The number of fatal hits on the plane is so small that the number of planes shot down from the ground is not worth the ammunition expended."

The author makes the common error of forming his opinion on the percentage of fatal hits obtained—whereas, the true result is indicated by whether or not the fire was effective. The percentage of hits may appear in a written report to be relatively small, but if the actual fire has been effective, whether the percentage is large or small makes no difference.

In practically all of the many tests conducted at the Cavalry School, the fire has been effective. By effective fire is meant that a plane coming within the danger zone of ground troops' small arms, or machine gun, fire, receives one or more hits which will crash it or force a landing.

The above stated conclusion of Lt. Ruffner's as to the value of ground fire against aircraft is *diametrically opposed to the Cavalry School's conclusion,* which conclusion was based on the results of the same tests referred to by him.

High Jumping

67 Yonge St.,
Toronto, Canada.
July 14, 1933.

The Editor,
THE CAVALRY JOURNAL,
1624 H Street,
Washington, D. C.

Dear Sir:

As a regular reader of the JOURNAL I was much interested in the account in the May-June number of the new world record for high jumping.

In this connection I thought the record of *Confidence* might be of interest to you. *Confidence* was owned by the late Sir Clifford Sifton. He was a bay horse, 16'2" by a clean bred hackney. His dam was probably a half-bred hackney mare. His weight was 1,200 lbs. *Confidence* lived to be 23 years old and was destroyed in 1924. In the spring of 1912 he won at Toronto, Montreal, and Ottawa, the shows running one week after another and the horse traveling by train on Sunday in each case, each high jump being over 7 feet. The day after the Ottawa show he was shipped by steamer to England. He arrived at Olympia just as it was opened. He won both high jumps—loose and tied poles—for the loose pole he set the world's record at 7'6⅝", jumping out of loose sand. He was then shipped to The Hague and won the Winans Cup for the highest jumper in Europe, again jumping over 7 feet. He was then shipped back to Canada and at Cobourg made the then world's record by jumping 7'10⅝". He was then shipped to Ottawa, where in open competition he broke his own record by jumping 8'½" over held poles. The horse was broken and ridden throughout his performances by Jack Hambleton, who is still manager of the Sifton Stables. These stables are owned by the sons of the late Sir Clifford Sifton and are well known in the show ring in both Canada and the Eastern States.

I appreciate that a horse does better over a tied or held pole than a loose pole, but, on the other hand, the figures are interesting as a comparison. Apparently in equestrian events as well as athletics the ceiling is always going higher as the years go on.

Yours truly,

C. S. MCKEE.

Canadian Defence Quarterly 1932 Prize Essays

THE July, 1933, issue of the Canadian Defence Quarterly contains two interesting prize essays on the following subject: "'In view of the trend of modern civilization, mechanization and motorization must be accepted as an inevitable stage in the evolution of army organization. Its acceptance or rejection may have seemed at one time to be a matter of choice, but this is no longer the case (Modern Formations, 1931).' Discuss this statement in its application to the organization and training of the Non-Permanent Active Militia in Canada." The prize was divided between Major W. J. Baird, M. C., The York Rangers, Toronto, and 2nd Lieutenant Wm. Wallace Goforth, 17th Duke of York's Hussars, Montreal.

The following extract from Lieutenant Goforth's essay stimulates imaginative speculation on the multiple possibilities of future warfare: ". . . . it is conceivable that 'motor guerilla swarms' admirably suited to Canadian conditions would neutralize the advantage of an enemy's mechanized formations. They would also provide an excellent, if unorthodox, screen for the movements of the main defending force. The Militia Act provides for the mobilization of every able bodied man, with certain exceptions, between 18 and 60 years of age, if necessary to the defence of the nation. One can picture this being amended, either officially or unofficially, in a war of invasion to include every man *and his car!*

NATIONAL GUARD NOTES

National Guard Status Bill Passes

IN an interval between measures of emergency legislation the House of Representatives brought up and passed the National Guard Status Bill. It then went to the Senate and was passed. It was signed by the President and became a law on June 15.

The Bill in its present form was introduced by Chairman McSwain on May 15th and is designated as H.R. 5645. It constitutes an amendment to the National Defense Act of June 3, 1916.

The measure is designed to fix the status of the National Guard and give it a dual capacity as a state and federal force, enabling the President to use it in the latter capacity without the necessity of drafting it into the service of the United States. It also has the effect of maintaining its identity while in federal service, reverting back to the states on the termination of that service and thus obviating the necessity for a complete reorganization such as was necessary following the World War.

Section 1 of the Bill defines the components of the Army of the United States as the Regular Army, the National Guard of the United States while in the service of the United States, the Officers' Reserve Corps, the Organized Reserves, and the Enlisted Reserve Corps.

In Section 2 the participation of the National Guard and Organized Reserve on the War Department General Staff is provided for. There will always be not less than five officers of each of the two components on duty with the General Staff, and when subjects affecting the policies and regulations governing the organization, distribution, training, appointments, assignment, promotion and discharge of the civilian components are under consideration the committee is to consist of an equal number of each component.

The composition and organization of the Officers' Reserve Corps is provided for in Section 3, which amends Section 37 of the National Defense Act. It provides that all persons appointed in the Officers' Reserve Corps shall be commissioned in the Army of the United States. Appointments are for five years, but an appointment in force at the outbreak of war may be continued in effect until six months after its termination, when an officer can make application and secure his release from the service. Any officer of the Reserve Corps may be discharged at any time in the discretion of the President. The rules governing the appointment of persons and the promotion of members of the Officers' Reserve Corps are specifically set forth and in general conform to the present regulations.

Section 4 amends Section 38 of the National Defense Act which relates to the appointment and assignment of officers of the National Guard. They are appointed and hold office during the period of their federal recognition and they may be held in service during a period of six months after the termination of a war, after which time an officer may request his release from service and it must be granted to him. The active duty status of officers of the National Guard is also provided for.

The composition of the National Guard and its designation as a reserve component of the Army of the United States is provided for in Section 5. It is specifically provided that it is not to be considered in the service of the United States except when so ordered under the law, and in time of peace it is to be administered, armed, uniformed, equipped and trained in its status as the National Guard of the several states, territories and the District of Columbia.

Section 6 covers the organization of the National Guard and contemplates that the units maintained in the several states shall be such that when combined together they will form complete tactical units.

The enlistment of the National Guardsmen is provided for in Sections 7 and 8 which specify the conditions under which enlistments may be made, and the enlistment contract which must be entered into. This latter gives the soldier the dual status and makes him available for service both to his state and to the United States. Original enlistments are for a period of three years, but subsequent enlistments may be for one year or three years. In an emergency the enlistment period may be extended at the discretion of the President for a period of six months after its termination. This insures the service of the guardsman for that period of time in case he may be needed.

Section 9 is devoted to definitions which specifically define the term "National Guard of the United States" as a reserve component of the Army of the United States composed of federally recognized units, organizations and persons duly appointed and commissioned in the National Guard of the several states and who have subscribed to the oath of office or oath of enlistment as provided for in the Act.

The discharge of enlisted men is provided for in Section 10 which states that a discharge certificate in such form and with such classification as is provided for the Regular Army shall be given. In time of peace the Secretary of War may prescribe the conditions under which discharge may be granted prior to the expiration of term of service. At the present time this matter is solely in the hands of state authorities.

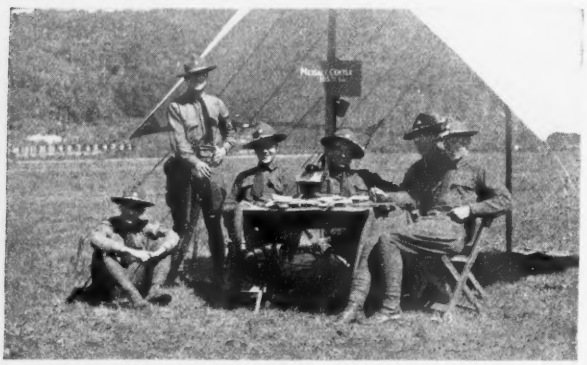
Section 11 amends Section 73 of the National Defense Act and prescribes the oath of office for the officers of the National Guard. It gives them a dual status as officers of the National Guard of their state and officers of the National Guard of the United States. It further provides that all officers who are now federally recognized officers of the National Guard may be appointed in the grade they now hold without further

examination except physical and in the meantime they continue to enjoy the privileges, emoluments, rights and benefits of their grade.

The examination for appointment to the National Guard is covered in Section 12. Such examination contemplates an inquiry into the physical, moral, and professional fitness of the applicant. It is to be conducted by a board of three officers of the Regular Army or National Guard of the United States, or both. The examination may be held at any time prior to the appointment or promotion. When found qualified the candidate may be issued a certificate of eligibility which is good for two years. It is understood that this section does not modify the existing regulations under which a candidate may qualify through pursuing the regular extension courses in the Army educational system.

Section 13 provides the law under which the federal recognition of an officer of the National Guard of the United States may be withdrawn. It contemplates that there shall be an efficiency board comprised of Regular or National Guard officers senior in rank to the officer being investigated, appointed by the Secretary of War. If the findings of the board are unfavorable to the officer and they are approved by the President, federal recognition shall be withdrawn. An officer absent without leave for three months may also have his federal recognition withdrawn. The appointment of officers in the National Guard may be terminated or vacated in such manner as may be provided for in the laws of the several States. Federal recognition is withdrawn automatically when an officer reaches the age of 64 years.

The National Guard Reserve is in effect provided for in Section 15. It is denominated the "Inactive National Guard." Men duly qualified for enlistment in the active National Guard may enlist for one term of one or three years only in the inactive National Guard. Members of the active National Guard may



The Message Center Set-up of the 105th Infantry, New York National Guard, on C.P.X. at Camp Smith, During the Summer Training of 1932.

be transferred to the inactive National Guard. Members of the inactive National Guard may be transferred to vacancies in the active National Guard. In time of peace no enlisted man will be required to serve in the National Guard for a longer period than that for which he enlisted. This proviso includes service in both the active and inactive National Guard.

Section 16 changes the designation of the Militia Bureau to "The National Guard Bureau." The Chief of the Bureau is to be appointed by the President with the advice and consent of the Senate, by selection from the lists of officers of the National Guard of the United States recommended as suitable for such appointment by their respective Governors, and who have had ten or more years commissioned service in the active National Guard, at least five of which have been in the line, and who have attained at least the grade of Colonel. He holds office for four years and is not eligible to succeed himself. It is understood that an endeavor will be made to change this proviso in the Senate so that the Chief of Bureau will be eligible to succeed himself. The provisions of officers and enlisted men of the Regular Army for duty with the National Guard is continued and not more than nine officers of the National Guard are authorized for duty in the National Guard Bureau. The actual number to be detailed in the Bureau will always depend upon the funds available for the purpose. At the present time there are three, one from each of the old Army Areas. The succession in command for the National Guard Bureau is also provided for in this section during the disability of the Chief of Bureau.

The arming and equipping of the National Guard is provided for in Section 17 which contemplates that they shall be so armed and equipped in like manner as the regular Army as far as practicable.

Section 18 provides the law under which the National Guard of the United States may be ordered into the service of the nation in any emergency declared by Congress, and in which troops in excess of those available in the Regular Army are necessary. The organization of units when called for such service is to be maintained intact as far as possible, and this will necessitate a much more complete system of replacements than existed during the World War. All of this contemplates that at the termination of the emergency and the completion of active service, the National Guard organizations will revert back to the States. The Section also provides that the war strength officer personnel shall be taken from the National Guard as far as practicable. This will necessitate definite arrangements for providing officers for such expansion.

The right to pensions provided for by law is extended to members of the National Guard when disability is incurred in active service of the United States. This right does not extend to the periods of field training of the National Guard.

Finally a provision is made for the appointment of officers of the Regular Army to the National Guard in time of war, with a temporary higher grade, and when so appointed they do not vacate their regular Army permanent appointment.

This law has been on the boards since 1924. It has been passed by the Senate at a previous session but failed of passage by the House.

BOOK REVIEWS

HISTORY OF THE THIRD UNITED STATES CAVALRY, 1846-1933. By Chaplain Ralph C. Deibert, U. S. Army. Printed by The Telegraph Press, Harrisburg, Pa. On sale at Hq., 3d Cavalry, Fort Myer, Va. Price $2.00.

In preparing the *History of the Third United States Cavalry*, Chaplain Deibert has achieved a signal success both as a stylist and as an historian.

No soldier can read this stirring account of valor, fortitude and devotion to duty without feeling his pulse quicken and his spirit swell with pride at the thought that he, too, is a blood brother of the fighting men whose deeds are so vividly portrayed.

But the value and interest of the book are not confined to soldiers. In it the historian will find valuable and accurate data, while the citizens of the western states, whose settlement the blood and sweat of the Third Cavalry did so much to make possible, will read enthralling accounts of the trials and hardships of his ancestors.

The Third Cavalry was organized as *The Regiment of Mounted Riflemen* by an Act of Congress approved May 19, 1846.

Before it was out of its swaddling clothes, fate catapulted it into the War with Mexico. When but seventeen months old, it had already participated in twenty-six battles and engagements and had sustained casualties to the extent of 55% of its strength.

During this campaign it was in the forefront of every operation and achieved the proud distinction of being the first unit to place its flag on the blood-soaked bastions of Chapultepec and on the National Palace in the captured city of Mexico.

The name of Sergeant James Manly, of F Troop, who carried that flag and later died of his wounds, should stand high on the list of warriors whose selfless valor has glorified the record of our arms.

It was while reviewing the regiment just after this feat that General Scott gave it its accolade by saying: "Brave Rifles! Veterans! You have been baptized in fire and blood and have come out steel." These words are now the motto of the Third Cavalry and are emblazoned on the Regimental Coat of Arms.

Nor were the laurels heaped on the regiment for its heroic debut in battle confined only to men—women, too, sought to do it honor. In February, 1848, the ladies of New Orleans presented the regiment with that flag, which still remains a treasured memento at headquarters. The letter accompanying the gift reads, in part, as follows:

"* * * The ladies desire that the Flag should be presented by you in their name, to that gallant regiment, which from its landing at Vera Cruz to its entry into the famed 'City of the Montezumas' has been foremost in every battle, sustaining, by the valor and sacrifice of its officers and men, the Flag of our beloved country."

After a stay of less than a year in Jefferson Barracks, Mo., the regiment finally set out on the task for which it had originally been destined, namely, the opening of the Oregon Trail. Marching on May 10, 1849, it traversed 2,500 miles of howling wilderness, finally reaching, in April of 1850, the vicinity of Vancouver.

Such a feat is almost without parallel, and its successful accomplishment stresses the fact that the usefulness of the soldier is not confined to deeds of war alone, for by the opening of this trail the Third Cavalry made the settling of the Northwest possible.

In 1851 the skeleton of the regiment reached Saint Louis by boat and, being recruited to strength, marched immediately to the southwestern frontier, where it remained in Texas, New Mexico and what is now Arizona until 1861. During this period it was constantly engaged in fighting the Indians and, besides innumerable scouts, patrols and other minor operations, participated in forty-three major conflicts.

In 1861 the regiment was rechristened the Third Cavalry, pursuant to an Act of Congress of August 3d, which discarded the terms "Dragoons" and "Mounted Riflemen" and replaced them with serial numbers.

Due to the remoteness of its stations the Third Cavalry was not fortunate enough to participate in many of the major battles of the Civil War, nevertheless it did manage to get into twenty-three such battles, besides innumerable lesser engagements, while one of its officers, Joe Wheeler, achieved fame in the ranks of the Confederacy.

No sooner had Lee surrendered than the regiment returned to its familiar job of fighting Indians, operating in New Mexico, Arizona, Colorado, Nebraska, Wyoming, and Montana until the opening of the Spanish War. Its service during this period was punctuated with ninety-one important combats.

In the Santiago Campaign its luck returned and at San Juan Hill it again achieved the honor of being the first American unit to place the Stars and Stripes on the enemy's works.

During the Philippine Insurrection it saw action almost from the start. Between November 11, 1899, and April 28, 1901, it was in some sixty-two engagements.

Returning to the States in 1902 it naturally drifted to the border and in Texas, in 1911, had the unique distinction of setting an all-time distance record. Between February first and June thirtieth, of that year, statistics show that the distance covered by patrols, detachments and troops on border duty aggregated the amazing total of 119,100 miles.

On November 4, 1916, a troop of the Third Cavalry made the first march with horses moved by trucks of which there is a record.

Due to the fact that we entered the World War after stabilization had set in, our cavalry had small opportunity, although one troop of the Third was fortunate in getting into action with the enemy.

As may be seen from the foregoing summary, the story of the Third Cavalry is replete with action, and the value of the book is enhanced by the presence of numerous illustrations, maps and tables. The whole forms a volume which should be in the library of every cavalry officer.

G. S. Patton, Jr.,
Major, 3d Cavalry.

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America in the Pacific by Foster Rhea Dulles. Published by the Houghton Mifflin Company, Boston and New York. 1932. 264 pages. Price, $3.50.

The history of the United States has been one of an almost continuous expansion towards the west. Sometimes it was the deliberate policy of the administration in office, and sometimes it was the irresistable surge of a land hungry and power seeking young nation. Throughout the entire period, the westward movement has had powerful opponents, both in and out of public life.

Mr. Dulles' well documented chronicle of our westward advance from the Mississippi River to the Philippine Islands show how, step by step, we acquired California and the Oregon Country; why we bought Alaska, and annexed Samoa and Hawaii; the motives that caused us to demand that Spain cede Guam and the Philippine Islands to us after the Spanish-American War. Accompanying the historical narrative describing the various asquisitions is a complete digest of the arguments both for and against each advance on the road to "empire." Numerous quotations are made from the speeches and writings of prominent Americans of the times. "America in the Pacific" should be read by every thoughtful American, and in the opinion of this reviewer the answers as to the "why" of many a diplomatic venture will be disclosed.

It is recommended for the library of every officer interested in Pacific affairs.

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Army Engineering, by Col. William A. Mitchell, Professor of Civil and Military Engineering, U. S. Military Academy. Washington: Society of American Military Engineers, 1933. Third Edition, revised; 4x7, with flexible covers, 329 pages, index. Price $3.00.

A revision of the textbook in the course of engineering in the First Class, at the U. S. Military Academy, showing the engineering necessary in the general education of a cadet in preparation for his duties as an officer in the United States Army, this book is an excellent field engineering manual, and useful to all officers. It is strictly up to date and covers the following chapters: Military Mapping; Military Shelters; Military Roads; Military Railway; Military Bridges; Fortification; Camouflage; Explosives and Demolitions; Siege Works; Chemical Warfare; Army Uses of Gasoline Engines; Army Power Plants; Construction of Seacoast Defenses; River and Harbor Engineering; Port Terminals.

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Incredible Pizarro by Frank Shay. Published by the Mohawk Press, New York. 1932. 334 pages. $3.50.

Mr. Shay admits that Francisco Pizarro was his boyhood hero. The reader will be forced to admit that the author has proved his case by one of the most thrilling and absorbing biographies to appear in recent times. There was a wealth of material from which to obtain the ingredients of a real thriller—and full advantage has been taken of the opportunity.

An illegitimate foundling, a swineherd, and at ten a camp-follower and armour bearer for his father—a Spanish officer—such is the start in life of Francisco Pizarro. At twenty, a seasoned soldier and veteran of many campaigns; at thirty-five, a seeker of fortune in the New World; at fifty, a retired soldier trying to win a comfortable existence through the unromantic way of raising cattle and swine to sell to the newcomers in Panama—ambition apparently dead; at sixty, this Captain who had gazed upon the Pacific with Balboa, was Captain-General of his Majesty's Spanish forces in Peru, and acknowledged conqueror of the mighty Inca Empire; at seventy, Francisco Pizarro, Marques de los Atavillos, Royal Governor of Peru, had been murdered by the followers of his old partner, Amalgro. Strong men make strong enemies, and Pizarro was no exception to the rule.

Pizarro was a product of his period, when men were hard and cruel. One rose to fame and fortune by cruel courage, endurance and ability. Life was a matter of hard fighting and intrigue, in which no mercy was shown the weakling. Frequently the successful man died fighting, and again Pizarro was no exception to the rule!

The author gives a clear and interesting picture of the life of the conquerors and settlers of New Spain of that period, and of the hardships and difficulties they encountered from the natives and Nature.

A chapter is devoted to the Inca Empire, giving a brief outline of its political, economic and social structure. It is a most interesting book.

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Marlborough by the Hon. Sir John Fortescue. Published by D. Appleton and Company, New York. 1932. 164 pages. $2.00.

Marlborough is considered one of England's most famous soldiers—if not the greatest. He was also a most successful diplomat. The author in a beautifully clear and concise style narrates the principal events of the Duke's life, both military and diplomatic, and in addition vividly describes the victories of Blenheim, Ramillies and Malplaquet. This little biography portrays a great soldier, a beloved commander and a loyal and loving husband; a splendid and endearing portrait of one of England's greatest sons.

SPORTS

Fort Leavenworth Modernizes the Horse Show

By Captain W. B. Bradford

Reprinted by permission from July, 1933 issue of "Polo," 180 Madison Avenue, New York City.

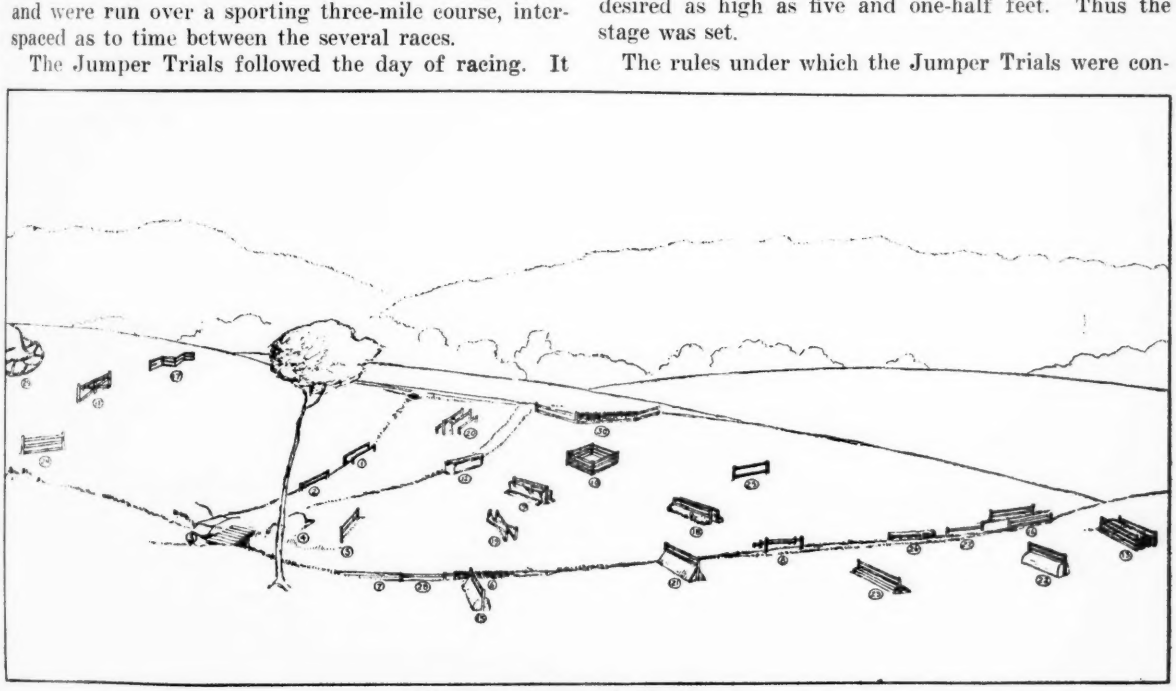
THERE has just been concluded at Fort Leavenworth, Kansas, an innovation in horse shows that may have its effect upon the sport in America. The change was radical from our familiar form and was interesting, popular and a pronounced success. It evidently points the way to renewed interest and enthusiasm in a game that in recent years has tended to become more of an exhibition of expensive horses and equipment than the thrilling, gripping contest of ability on the part of rider and mount that one has a right to expect.

This meeting was not a SHOW, in the sense indicated above. It was a contest of horse and rider against keen competitors, a severe test of the ability of each, and for that reason was called "The Fort Leavenworth Hunter and Jumper Trials." These events formed a part of the Spring Race Meet. The Hunter Trials were included in the racing program and were run over a sporting three-mile course, interspaced as to time between the several races.

The Jumper Trials followed the day of racing. It is in connection with their special features that I am particularly concerned at this moment.

The Hippodrome was unique. I do not know its size, as it was not enclosed, nor intended to be, and was never measured. Suffice it to say that various courses of a mile or more in length can easily be placed within its limits. The accompanying sketch gives a good general idea of the area, of the obstacles to be encountered, and of the pleasantly rolling nature of the terrain. Indeed it is merely a section of the country over which the local hunt holds forth, adapted to a specific purpose. The obstacles were twenty-eight or thirty in number, built almost entirely from natural material near at hand, and combined with the natural accidents of the terrain itself, to make them more interesting. Every type of jump found in the local hunting country was duplicated; the natural ditches and little stream running through the center of the area were altered only sufficiently to give them the desired size, and a safe footing. A limited number of purely artificial jumps were added. With few exceptions, obstacles were built on a three and one-half foot permanent plan, in order to take care of the greenest horses, but so arranged that they could be raised if desired as high as five and one-half feet. Thus the stage was set.

The rules under which the Jumper Trials were con-



The Fort Leavenworth Hippodrome

1. Road crossing. 2. Post and rail with ditch. 3. Ditch and bank. 4. Irish single bank. 5. Post and rail drop jump. 6. Water jump. 7. Natural ditch. 8. Triple bar over ditch and water. 9. French type "Open ditch." 10. Pen jump. 11. Gate. 12. Brush. 13. Double oxer. 15. Aiken fence. 16. In and out with ditches. 17. Virginia worm fence. 18. Auteuil double brush and bar. 19. Double crossed rails. 20. Hog back. 21. Chicken coop with rails. 22. Stone wall with rails. 23. Style with rails. 24. Post and rail. 25. Single rail. 26. Liverpool. 27. Post and rail, ditch and water. 28. Post and rail, ditch and water. 29. Military trench system. 30. Hedge and road crossing. (These obstacles in general have small natural wings, about three feet long, which have been omitted from the sketch in order to show details more clearly.)

ducted were those of the *Fédération Equestre Internationale*, which must be increasingly observed if one's eyes are ever to be turned towards international competition. In general, these rules contemplate various different courses of one-half to one and one-half miles in length, over terrain containing many and different obstacles. They encourage and require horses of galloping ability in hunting condition. Disobediences such as whirling, balking, refusing or running out are severely penalized, a combined total of three such on a course causing elimination. Faults over jumps are confined to knockdowns, with an equal penalty, whether it be in front or behind. Galloping is required by time limits, but a rushing horse automatically handicaps himself by tiring over the long courses and consequently incurs frequent penalties as he draws near the finish. The rules of the *Fédération* forbid riding by professionals. A minimum weight of one hundred and sixty-five pounds is prescribed.

Competitors at the Leavenworth Meet were not informed of any of the details of the courses, except as to maximum height, spread, distance, and time, until the day of the event. Each class was over an entirely different series of jumps, which were consecutively marked in each case by numbered discs which differed in color for each class.

Classes and results were as follows:

Green Jumpers. For horses that have never competed in an organized meeting. About 1000 yards over twelve or fourteen obstacles. Maximum height, three feet, six inches. Maximum spread, six feet. Minimum rate, three hundred and fifty yards per minute.

Place	*Name*	*Owner*	*Rider*	*Locality*
1st	*Little Joe*	Maj. W. K. Harrison	Maj. Harrison	Ft. Leavenworth
2nd	*Don*	Maj. Milne	Miss Simons	Ft. Leavenworth
3d	*Brian Born*	Maj. N. E. Fiske	Maj. Fiske	Ft. Leavenworth

Individual Jumper Championship. About 1200 yards with from fifteen to sixteen obstacles. Maximum height, four feet, three inches; maximum spread, twelve feet. Rate, four hundred yards per minute. *Handicap class.*

1st	*Tyrol*	Army Team	Lt. C. W. A. Raguse	Ft. Riley
2nd	*Suzanne*	Army Team	Lt. Raguse	Ft. Riley
3d	*Ansonia*	Army Team	Lt. Thomson	Ft. Riley

Handy Jumpers. About 900 yards over twelve to fifteen obstacles. Maximum height, four feet; maximum spread, ten feet. Minimum rate, four hundred and twenty-five yards per minute. Score to be determined by adding total elapsed time to other penalties incurred on course. Winner to be the contestant with smallest total score. *Handicap class.*

1st	*Hilojak*	The Cavalry School	Lt. Noble	Ft. Riley
2nd	*Sally Gun*	The Cavalry School	Lt. Yeomans	Ft. Riley
3d	*Reno Baby*	Army Team	Lt. Thomson	Ft. Riley

Open Jumpers. About 1000 yards with from twelve to fifteen obstacles. Maximum height, four feet; maximum spread, twelve feet. Minimum rate, three hundred and seventy-five yards per minute. *Handicap class.*

1st	*Dan Anthony*	Army Team	Lt. Hains	Ft. Riley
2nd	*Sally Gun*	The Cavalry School	Lt. Yeomans	Ft. Riley
3d	*Don R*	Army Team	Lt. Raguse	Ft. Riley

Jumper Team Championship. About 1200 yards with eighteen to twenty-three obstacles. Maximum height, four feet, six inches; maximum spread, fourteen feet. Minimum rate, four hundred yards per minute. Teams to consist of four contestants. The three best scores only to count. International rules apply, except that the course is to be jumped one time only. *Handicap class.*

Place	*Name*	*Owner*	*Rider*	*Locality*
1st	*Tyrol*	The Army Team	Lt. Raguse	Ft. Riley
	Babe Wartham	The Army Team	Maj. Thayer	
	Avocat	The Army Team	Lt. Hains	
	Ansonia	The Army Team	Lt. Thomson	
2nd	*Timber Cruiser*	F. A. Sch. H. S. Team	Capt. Argo	Ft. Sill
	Triangle	F. A. Sch. H. S. Team	Lt. Willems	
	Alcazar	F. A. Sch. H. S. Team	Lt. Taylor	
	Virginia Navarre	F. A. Sch. H. S. Team	Capt. Stewart	

In discussions prior to the Leavenworth meet, one often heard: "Yes, these plans are fine; but where are we going to find the horses?" Naturally, if we stop to think, the answer is simple. *Make the course fit the horse.* Any hunter or jumper is capable of competing under these conditions if the planning is carefully done. Entries in this year's Green Class, for example, were truly inexperienced, for the conditions not only excluded winners in previous organized meetings, but also all who had previously competed, even though unsuccessfully. Yet the class was the second most popular, from the point of view of number of entries, and was eminently successful, for the course was simple and honest and did not overtax the ability of any contestant.

An important feature of the Meet, introduced for the first time in this country, was that of handicapping. In Kansas, Missouri and Oklahoma there are many military hunters and jumpers of widely varying abilities. In some instances their owners came from great distances, at their own personal expense and with no prospect of cash prizes, ready and willing to be handicapped. They were impelled by a true sporting instinct, attracted by the new ideas of the Meet, and willing to undergo a handicap in order to add to the zest of competition, which we all love. At a meeting of these sportsmen on the eve of the contest, a suggested handicap list was presented, examined, altered here and there, and unanimously agreed upon. Well known jumpers from the Army Team such as *Babe Wartham, Avocat* and *Ansonia* were placed in the five-foot classification. This did not prevent them from entering the lower classes, but imposed a handicap of six five-foot jumps, chosen from the simpler types, in every course. Thus, in the Military Team Event, whose twenty-three obstacles ran in general from four feet to four feet, six inches in height, six of the jumps were raised to five feet when this particular group of horses appeared. In the same way, *Tyrol, Timber Cruiser* and *Prominent Tom*, all well known performers, were rated at four feet, nine. In the four foot, six class were *Suzanne*, of international fame, *Muskogee, Reno Baby, Triangle, Alcazar, Virginia Navarre, The Judge, Tornado*, and others. The four foot, three class contained many more of somewhat less experience, and the remainder were given the general rating of four feet.

This probably sounds complicated but worked simply

and smoothly. In each class, horses were grouped according to their ratings. In the beginning, jumps were set for the lowest rating. When this non-handicap group had all jumped, six of the obstacles on the course were raised three inches, and horses on the first handicap list performed. The same six jumps were then raised again for the next group and so on to include entries with the highest rating. Results proved that impositions in general had been correct, and contests were well equalized.

Next year similar contests will be held here and on other military posts in this area. Plans are already under way at Fort Sill and Fort Riley. As for handicapping, the original list will be used. However, those horses which won or placed this year will be given a slightly higher rating next Spring, with the idea of gradually working them towards the limit of their ability, and at the same time encouraging the younger horse and insuring him a chance. No civilian entries are handicapped until they have actually won at one or more shows of this circuit.

Let us now examine the result of this system for this year and see what can be expected for the future. A marked effect was noticeable primarily in the entry list. A great many old performers which have won for years and are well known but which have reached their limit and have no future, were left behind. Their riders realized that they would be given the maximum handicap and brought younger prospects in their stead. Horses which won this year will be placed in a higher class next year. If they have the ability to continue on, their riders will continue to bring them. If they have no future, they will fade from view, and small loss, for who is anxious to see the same horse, having reached his limit, bring home year after year the same old ribbons, won under unvarying conditions? I for one have ridden many such horses and can testify to the lack of thrill. This fault is so noticeable in our Association Shows. One has only to glance over the records of the Blue Book to find the same names leading the list year after year, especially when conformation is a consideration. How much better for sport and industry to make increasingly greater demands on our best and give the promising youngsters a chance! By this means a superior group will reach the top, the mediocre four foot, three veteran will be forced out, and the industry, whose development should be the real *raison d'etre* of our shows, will benefit accordingly.

Fort Leavenworth Hunt Race Meet

By Major Norman E. Fiske, Cavalry

MAY 6th, 1933, the Fort Leavenworth Hunt, in its third annual race meet enjoyed good weather for the first time and turned in a day of sport to satisfy thoroughly the large attendance from Kansas City, St. Joseph and nearby army posts.

The course, which had been extended and improved, traversed about three miles of the country and presented a wide variety of fences, ditches and combinations thereof, sufficient to put the clever, confident freegoing hunter at a premium over the more specialized steeplechaser. Footing for the most part was firm and springy, but a hard rain the night before left bits of heavy going in the low spots which called for a horse with plenty of staying power. Spectators from their vantage point on Merritt Hill could follow the races very well without the aid of glasses. Entry lists and character of performance stacked up well with the first two meetings of this hunt. It was a fortunate thing that the meet got in under the wire, as only a few days later the General Staff School was closed for the summer in order to permit its students to go out with the Citizens' Conservation Corps in the National Forests.

It is the earnest hope of the many who participated in this meet that by next spring the school will be functioning as usual so that another equally successful meet may be held.

The official results follow:

The First Sergeant Martin McDowell Race. A cross-country race open to soldiers of the Tenth Cavalry only; in colors on government mounts over 3 miles of hunting country. Time: 8 min., 25 sec.

Place	*Name*	*Rider*
1st	*Happy Creek*	Pvt. J. Johnson
2nd	*Valorous*	Pvt. J. Ashby
3rd	*Morning Glory*	Pvt. H. Watkins

Hunt Trial for Hunt Members. A cross-country race: open to members of a recognized hunt club in uniform or suitable hunting clothes over 3 miles of hunting country at 18 miles per hour. Catch weights. This class was divided into Ladies and Gentlemen Hunter Trials.

Ladies	*Owner*	*Rider*
1st *Brian Boru*	Major Fiske	Miss H. Sterling
2nd *Don*	Major Milne	Miss R. Simons
3rd *Jack Rabbit*	Ft. L.	Mrs. Helen Wilson
Gentlemen		
1st *Evidence*	Cav. Sch. Hunt	Major R. L. Coe
2nd *B. D. Price*	Ft. L.	Capt. M. E. Jones
3rd *Miss Ashton*	Ft. L.	Capt. J. I. Wood

The Buffalo Bill Stakes. A flat race on turf: open to all farmers of Platte County, Missouri, and Leavenworth County, Kansas; 3/8 mile. Time: 34 sec.

1st *Chief*	Mr. Carl Dietrich	Mr. Leo Murawski
2nd *Jerry*	Mr. Arlie Duree	Mr. Duree
3rd *Mollie*	Mr. Coburn Hull	Mr. Hull

The Skinny Wainright Race. A cross-country race: open to members of a recognized hunt club, in hunt livery or uniform over 3 miles of hunting country: for hunters (non-thoroughbred) certified by a M. F. H. as qualified and to have hunted regularly during the past season. Time: 8 min., 1/5 sec.

1st *Brown Arrow*	Cav. Sch. Hunt	Major R. L. Coe
2nd *Kim Brown*	Ft. L.	Capt. M. E. Jones
3rd *Cyclone*	Ft. L.	Lt. Col. Tombaugh

Hunter Trials for Teams of Three Members of a Hunt Staff. A cross-country race open to members of a hunt staff in hunt livery over 3 miles of hunting country at 20 miles per hour, 50 yards distance between riders.

1st	*Black Fox*	Ft. Leavenworth	Capt. P. C. Febiger
	Oracle	Ft. Leavenworth	Miss H. Sterling
	Black Boy	Ft. Leavenworth	Miss M. Woodruff
2nd	*Fayette*	Ft. Leavenworth	Capt. W. Bradford
	Gray Ike	Ft. Leavenworth	Capt. M. E. Jones
	Adversity	Ft. Leavenworth	Capt. J. L. Wood
3rd	*Water Flower*	Cav. School Hunt	Capt. McNabb
	Evidence	Cav. School Hunt	Major Coe
	Howdy	Cav. School Hunt	Major K. Thomas

Fort Leavenworth Hunt Cup. A cross-country race; open to members of recognized hunt club in hunt livery or uniform over 2½ miles of hunting country; for horses that hunted regularly during the past season and certified by a M. F. H. as qualified hunters. Time: 8 min., 20 sec.

1st	*Soother*	2nd Cavalry	Capt. F. Nelson
2nd	*Bubbles*	Capt. Lattimore	Major Harrison
3rd	*Happy Creek*	Ft. Leavenworth	Capt. Lueking

The Tommy Heintzelman Race. A cross-country race: open to all in colors over 2½ miles of hunting country. Time: 8 min., 4 sec.

1st	*Long Tom*	Mr. W. Keith	Clyde Comps
2nd	*Mineral*	Ft. Leavenworth	Major E. E. Schmein
3rd	*Bunker Hills*	Capt. J. H. Irving	Capt. Irving

Mission Valley Hunt Race Meet Kansas City, Mo., April 29, 1933

STEEPLE-CHASERS and hunters representing The Cavalry School competed in a race meet at the Mission Valley Hunt, April 29, 1933, with the following results:

Individual Hunter Trials—

1st Place—Water Flower—Capt. A. B. MacNabb, 9th Cav.

2nd Place—Evidence—Major R. L. Coe, Cavalry

Hunter trials for teams of three members—

1st Place—The Cavalry School Team:
Brown Arrow—Major R. L. Coe, Cavalry
Water Flower—Capt. A. B. MacNabb, 9th Cav.
Evidence—Major Kramer Thomas, Cavalry

Two mile steeple-chase over brush—Kellsboro' Jack
(2nd place in this race was won by Capt. M. E. Jones, 10th Cavalry, Ft. Leavenworth.)

3rd Place—Onall—Lt. F. P. Tompkins, 9th Cavalry

Three mile Point to Point—Mission Valley Adieu

1st Place—Frills—Lt. E. F. Thomson, 9th Cavalry

2nd Place—Soother—Capt. Frank Nelson, 2d Cavalry

Results of the Artillery Hunt Point-to-Point Meet

May 13th and 14th 1933, The Field Artillery School, Fort Sill, Oklahoma

NACHEZ "POINT-TO-POINT"—Two (2) miles—over timber and stone wall. *Entry Requirements:* Open to any horse owned by the United States Government or an officer of the Regular Army. Ridden by officers assigned to the School Troops Division of the Field Artillery School. Horseshow Team and Instructors in the Department of Animal Transport of the Field Artillery School not eligible. Silks or uniform. *Weight:* 160 pounds; overweight permitted but no allowance made.

Starters	*Finish*	*Riders*	*Owners*
Fritz, bl.g.,14	1	Capt. A. P. Kitson	U. S. Army
Thor, ch.g.,8	2	Lieut. J. P. Hill	U. S. Army
Hula Girl, ch.m.,6	3	Lieut. G. C. Stewart	Lt. G. C. Stewart

ARTILLERY SCHOOL "POINT-TO-POINT"—Two (2) miles over timber, brush, and stone wall. *Entry Requirements:* Open to any horse owned by the United States Government or an officer of the Regular Army. Ridden by members of the Advanced Class in Horsemanship and instructors in the Field Artillery School. Silks and uniform worn. *Weight:* 160 pounds; overweight permitted, but no allowance made.

Starters	*Finish*	*Riders*	*Owners*
Kiluna, ch.m.,8	1	Lieut. L. S. Griffing	U. S. Army
Cardita, b.m.,6	2	Lieut. H. F. Handy	U. S. Army
Lady Cliff, b.m.,6	3	Lieut. L. R. Wingfield	U. S. Army

GERONIMO "POINT-TO-POINT"—Two (2) miles over timber, logs, and stone wall. *Entry Requirements:* Open to any horse owned by a member of a recognized hunt or the United States Government which has not raced in any race except hunt races for the past four (4) years. Ridden by members of recognized hunts—in silks or hunt livery. *Weight:* 160 pounds; overweight permitted, but no allowance made.

Starters	*Finish*	*Riders*	*Owners*
Joseph Sabbath, ch.g.,8	1	Major C. A. Pierce	U. S. Army
Lord Russell, b.g.,7	2	Lieut. J. E. Theimer	Capt. G. L. Danforth
Front Royal, b.g.,6	3	Lieut. E. L. Strohbehn	U. S. Army

COLONEL ARTHUR J. ELLIOTT MEMORIAL "POINT-TO-POINT"—Three and one-half (3½) miles over timber logs, ditches, stone wall, and fair hunting field. *Entry Requirements:* Open to horses owned by an officer of the Regular Army or by the United States Government that have been certified as qualified hunters by the Master of Fox Hounds of one of the Service Hunts, and have not previously run in other than Hunter Races. Ridden by officers of the Regular Army stationed at Fort Leavenworth, Fort Riley, or Fort Sill, and who are members of either The Fort Leavenworth Hunt Cavalry School Hunt, or the Artillery Hunt. *Weight:* 160 pounds; overweight permitted, but no allowance made.

Starters	*Finish*	*Riders*	*Owners*
Frills, b.m.,7	1	Lieut E. F. Thomson	U. S. Army
Dolly Crump, b.m.,11	2	Lieut. R. L. Taylor	U. S. Army
Brown Arrow, br.g.,13	3	Lieut. D. E. Bradford	U. S. Army

The West Point Horse Show

By Lieutenant Frank DeK. Huyler, Cavalry Reserve

Extracts reprinted by permission from the June 17, 1933, issue of "The Rider and Driver," 342 Madison Avenue, New York City

AS A Hunter and Jumper Show, West Point is unsurpassed. People who attended, exhibitors and spectators alike, are agreed that the new courses are among the most sporting in the country. While not unduly hard, the jumps were such as to make a horse put his best foot forward.

The management holds that hunters and jumpers alike should be sensible and level-headed, should jump boldly and be under control at all times. Each should keep his eyes and mind on the obstacles to be met and should take his fences in a uniform manner. It was with these ideas in mind that a course of jumps was constructed that would make it necessary for a horse to gallop on and jump at his best.

In order to show proper training and to require some show of horsemanship on the part of the rider, wings were eliminated from all fences. Much to the surprise of some people, the horses jumped just as well, and in most cases a lot better than they are accustomed to jump over the usual course of four post-and-rails. The different types of jumps on the course kept the horses awake, and their minds alert. There should be many more shows of this type put on at West Point. Once an exhibitor has shown his horse over such a course, it is hard to see how he will be satisfied with any other.

Only thirteen classes made up the two-day exhibition, giving the entrants plenty of rest between appearances. Because of the length of the courses and the number of entrants in the classes, there was not a dull moment in the two days. The classes followed each other without even the usual delay, as the only change that had to be made for the different events was the flagging of the various jumps to be used. The fences were all permanent and remained in place throughout the two days, with the exception of the second morning, when the show was held in the riding hall because of impending rain. However, the clouds cleared away, and the show was able to come out in the open for the afternoon session.

* * *

The jumper championship was awarded to *Pat Grey*, of the New York State Troopers, ridden by Bud Keely. Reserve champion was the writer's little bay gelding, *Captain Kidd*, which had been accounting for himself quite favorably throughout the show, winning the Robert L. Howze 4 ft. 6 in. class and placing in two others.

Perhaps the most consistent horse of the show was Major George S. Patton's chestnut, *Hukupu*. This horse jumped in about every class of the show and placed in most of them. He won the Military Stake class on the first day, placed 2d to *Captain Kidd* in the Robert L. Howze, took 3d in the Corinthian, was a member of the winning military team and added 4th ribbons to his list in two other classes.

Hukupu, Major G. S. Patton Up

The Fault-and-out Stake was won by Captain Frank L. Carr, riding the West Point Horse Show team's black gelding, *Geronimo*, after a jump-off with Mr. Jack Spratt's bay gelding, *Jack Spratt*, and *Captain Kidd*. The latter two finished in the order named. *Geronimo* was also the winner of the "Malin Craig," shown over jumps up to 4 ft. 3 in., and placed 3d in the Military Stake. Captain Carr's own imported Thoroughbred, *Mithridate*, schooled beautifully, and jumped well to take an Officer's Charger class, in which an exceptionally fine looking bay, *Dayfik*, owned and ridden by Major Rayner, of West Point, took 2d. Third money went to Major Frederick W. Boye's *King of Hearts*.

* * *

The Fort Myer Horse Show team came to the front to win the first jumping class of the show, the blue to Major Patton's bay gelding, *Wild Ben*. This class, for the Edward L. King Trophy, was competed for over jumps up to 4 ft. Second money went to Major Boye, riding *Queen's Own*, the veteran grey of the West Point team, while 3d place was awarded to Lt. J. W. Wofford's *Diplomat*.

Lt. Robert L. Howze gave Mr. Marcellus H. Gallop's grey gelding, *Royal Hawk*, a very fine ride to win the novice hunter class, in which there were fourteen entries. Jumping for the first time over a course without wings, the horse travelled steadily to defeat Warfield Farm's *Lucca*, a brown mare of promise. Third place was taken by *Reno Africa*, entered by the West Point team.

Everything was done for the enjoyment of exhibitors. Luncheons were served each day at Cullum Hall, to which exhibitors and judges were invited as guests of West Point Horse Show Association. As customary, the show was given for the benefit of the Army Relief Society.

West Point is to be congratulated on its courage in attempting a show that was such a departure from the usual stereotyped event. The classes brought out the real hunters and jumpers, setting them apart. It might be well to assure those exhibitors who did not show at West Point that the courses did not contain one single fence that it was not reasonable to expect a horse to jump. The fences were solid enough to make a horse take care of himself, but all would come down if given a hard rap. Another year exhibitors would do well to include West Point on their schedule, as they will find waitin for them a show that will live long in their memory as one of the best they ever attended.

Tuxedo Horse Show

By Lieutenant Frank DeK. Huyler, Cavalry Reserve

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"ALWAYS one of the finest of the Spring shows."

Such is the reputation that the Tuxedo Horse Show has made for itself during its many years of existence. Under the most capable direction of its President, the genial Mrs. David Wagstaff, the show this year was even better than in previous years.

The classes in all divisions were well filled, and the presence of various Army teams on their way to the West Point Show added a military color to some of the classes. The outside course has been much improved, and the hunter performances were consequently a lot better.

* * *

The Special course jumping was won by Captain G. I. Smith, riding Fort Myer's chestnut jumper, *Flash*. Another jump-off occurred in this class, with 2d money going to the Park Auto Renting Company's *Overlooking General*.

* * *

Redwood, owned by the Essex Troop Horse Show team, defeated Fort Myer's *Hukupu* in the military jumping class open to officers. On the day before, *Hukupu* had won a nice class of officers' chargers, defeating Major Fred Boye's *King of Hearts*.

One interesting thing was the victory of the aged gelding, *Pleasonton*, in both military jumping classes open to cadets from West Point, and also in the class for limit military jumpers. *Pleasonton* has been jumping about as long as any horse in the ring. The writer himself remembers jumping against him as far back as 1917, at which time the horse was listed as aged. However old he may be, he was still able to enter three classes and take the blue in all of them, ridden by Cadet J. O. Boswell.

Military Polo

From the French "Revue de Cavalerie," March-April, 1933; translated by Major N. Butler Briscoe, Cavalry

POLO, "the king of games and the game of kings," is also the game *par excellence* for the military rider. If racing, horseshows and other sports develop in the ranks of the army the taste for risk, hardiness and precision, polo alone can give them sporting discipline and requires of them a profitable physical training. Profit, but pleasure also. Is not the supreme joy of the mounted man to feel the effort of his horse?

Where, more than in polo, can one test it? This effort, renewing itself each instant, be it in the contest of speed, the contest of mass forcing the adversary out of the play or contest in handiness for the rapid accomplishment of a turn. Whether actuated, then, by the complete training of man and horse, or simply by the pleasure that he gets, every soldier should be a fervent adept in this fine sport.

In the army polo was born following the war, under the impulse of Captain Maleor and with the aid of the Federation of Polo Clubs of France.

In discovering this new sport, the mounted men were thrilled and at once were filled with the most beautiful hopes. With the equestrian ability of the corps of officers, the large choice of horses, the facilities for training which exist in a great number of regiments, the military teams should progress rapidly and be able to line up against the "civilians" and the "foreigners". In fact Saumur stood at the head of the movement and had attained a measure of success, being classed as the best military team and competing against good Spanish teams.

Then came a disenchantment. Saumur retired from the game, and the military trophy has belonged to different regiments, but frequently returning to Tarbes. Against the foreign teams, against the good civilian teams, the regimental teams have been able to do nothing.

Then recourse was had to selection: a national team, regional teams. The result has been excellent. These regional teams played in 1931 for the Cup of France and the national team has had frequent occasion to go outside the frontiers and defend the French colours in foreign countries with success. Very recently a national team met the Italians and the English at Rome. It outclassed the former but it could do no more than defend itself with success against the latter, who had sent an excellent team.

Where, then, is polo today from the point of view of numbers and quality? Some fifteen regiments practise the game, and some hundred players have handled a mallet. From the standpoint of quality, no regimental team is capable of playing on a fair competitive basis with a good civilian team. Of the hundred players some twenty more or less will be eligible to play at Bagatelle with a handicap above 0. Finally, if there is opposed to the French team playing recently at Laversine and composed of Messrs. de Monbrison, Macaire, Couturier, and Rasson, a military team selected from among the best, perhaps one could give the military team a handicap of 7 against 17. The difference between these numbers indicates the margin that we feel exists between the best teams, military and civilian. Certainly progress is undeniable, but the results have not fulfilled the hopes at the start. Why be astonished,—could it be otherwise?

Let us try to find the answer and indicate how to direct our efforts. First, for what should we reproach our horses; can they equal the best ponies of the civilian players? Evidently ours do not attain the happy combination of weight and speed which makes certain of theirs marvelous playing ponies. How many of us after having succeeded in training our mounts, with great reinforcement of whip blows, to the point of being "crocodiles", feel ourselves irresistibly ridden off the line of the ball!

However, an officer, allowed to exercise his choice in the lot of 20 young horses per squadron, can find among them some which approach this standard. There are in the dragoons some Norman horses which gallop

and win cross-country races; the Anglo-Arabs of the light regiments at least have the speed and the suppleness. Certain horses from Tarbes, like *Vaillant*, shown at Rome by Captain de Talancé and classed first, present the characteristics of the perfect pony, strong, splendid, breedy.

We can certainly better our strings of ponies; the difficulty for us lies in conditioning and training. Our horses are primarily military horses and naturally available for all drills. Exceptionally we can get some for a game or a trip, and frequently even this in addition to their daily work. It becomes, under these conditions, almost impossible for an officer to present a stable having the condition and training of a civilian stable.

Second cause of inferiority: the lack of training in company. If players can, in addition to their duties, find time to work individually, on the other hand it becomes difficult, considering military obligations, to collect the number of people necessary for a game. Finally and above all, the opportunities of meeting are extremely rare; how many of us have had the good fortune to play with the good teams at Bagatelle, Laversine, Deauville, Cannes, Biarritz, or Aix? These alone can teach true play to the army players.

But even there is not the root of our inferiority, and that can be remedied. We have said there are about a hundred players, of whom about half work. Of this number, how many are young? Very few. To be 20 years old, well bred, cool-headed, loving the horse and the sport, one could be classed "international" in a few years. Are there not other Henri Couturiers in the army? There are some. What is needed is to advise and train them.

What Effect Would Be Obtained by a Patrol ...

.....Composed of a Good Polo Team, Men and Horses!

Certainly this sport makes heavy demands; it needs a great number of horses, trips, some hours left free from military duty, a piece of the drill ground. But how well it pays! The regiment that triumphs in sports is far from being the worst, and a corps of officers who cultivate polo, with its animation, its sports-discipline, is more apt than another to transmit to their men the fundamental virtues of the French cavalryman.

Finally, in order to sum up, let us picture one of the cavalry fights of the latest war and imagine the effect obtained by a patrol composed of a good polo outfit, men and horses. And what sport is closest to combat mounted?

Chef d'escadrons Poupel

Fédération Equestre Internationale

THE International Equestrian Federation of which General Henry is President held a meeting in Paris during the latter part of November.

After considering the report of the Olympic Games held in Los Angeles last summer, the International *Dressage* Contest for 1933 was discussed. This contest is an annual event in Europe, being held in a different country each year.

The International *Dressage* Contest for 1933 was held at Aix-La-Chapelle (Aachen) Germany between the 22nd and 27th of July and consisted of two classes; one called the *Prix de Saint Georges* was relatively simple, and the other called the *Grand Prix de Dressage* included movements of the High School. Descriptions of these contests may be had on request.

Atlantic City Horse Show

Fort Myer Horse Show Team

Pallalani, Lt. E. L. Harrison, 3rd Cav.
- 2nd, Bridle Path Hacks, 14 hands and over
- 4th, Bridle Path Hacks, half-bred

Bay Morn, Lt. C. W. Bennett, 3rd Cav.
- 3rd, Bridle Path Hacks, Registered Thorobreds

Miss America, Lt. Col. C. P. George, 16th F. A.
- 2nd, Handy Hunters
- 6th, Marlborough-Blenheim $1,000 Open Championship Jumper Stake

Squire, Lt. C. W. Bennett, 3rd Cav.
- 3rd, Handy Hunters
- 4th, Open Jumpers
- 4th, Triple Bar
- 3rd, Bareback Jumping

Garçon, Capt. G. I. Smith, 3rd Cav.
- 3rd, Open Jumping
- 4th, Touch and Out

Flash, Capt. G. I. Smith, 3rd Cav.
- 1st, Bareback Jumping

Pairs of Hunters:
- 1st, *Squire*, Lt. Bennett; *Flash*, Capt. Smith
- 2nd, *Miss America*, Lt. Col. George; *Garçon*, Capt. Smith

The Foreign Military Press

Reviewed by Major Alexander L. P Johnson, Infantry

AUSTRIA—*Militarwissentschaftliche Mitteilungen*—June, 1933.

"The Concluding Operations or an Enlarged Manchuria and Considerations of the Problems of the Pacific," by General Otto Wiesinger.

A summary account of the Japanese operations in Jehol, and a brief comment upon the Japanese withdrawal from the League of Nations form the background of an interesting survey of Japan's international relations. Thus, the author points out, that Japan's relations with Great Britain involve political, economic and racial questions. Politically, Japan and Great Britain were allies from 1902 to 1922. The treaty clause, which assured Japan of British help in the event of war with the United States, the author observes, proved rather irksome to the British. Great Britain feared that it might encourage Japan to aggressive action at a time which might prove embarrassing to British interests. Great Britain secured release from that treaty obligation, the author notes, by assigning to Japan the Port of Kiautchau (Tsingtau) and the German Pacific Islands.

In the author's opinion, Japan is Great Britain's natural ally against Soviet Russia, and similarly Great Britain is Japan's natural ally against the United States. He states, that in the event of a war between the United States and Japan, the former could hardly rely upon British racial kinship and comradeship at arms. Great Britain has basic interests in maintaining Japanese power as a counterweight against both Soviet Russian and American projects.

From an economic point of view, Japan became England's greatest competitor in China. The growth of Japan's trade in India is likewise viewed with misgivings by the British. In racial matters, owing to the attitude of the Dominions, the British Government was unable to meet the wishes of Japan. The exclusion of Japanese immigrants from the Dominions caused considerable ill-feeling among the Japanese.

The three powers, Japan, Great Britain and the United States, the author observes, are now engaged in an acute commercial competition for the markets of Asia. Japan is consolidating her position on the continental mainland, and, at the same time, she is also getting her Pacific front ready for eventualities.

The relations between Japan and the United States, the author writes, are influenced by the same factors which dominate relations with Great Britain. The friction is, however, intensified by the greater aggressiveness of the American people. He points out, that the American press quite frequently assumes an openly hostile attitude towards Japan, although upon sensing an actual peril of war, a more conciliatory tone is assumed. The racial difficulties arising from the exclusion of Japanese immigrants from the United States brought the two Powers to the verge of war in 1914. The Washington Conference not only deprived Japan of all advantages she had secured in China, but it actually compelled Japan to recognize the policy of the Open Door in China. This tended to aggravate the difficulties between the two nations.

America's trade in the Far East, in 1913, amounted to $125,000,000 while in 1931 it actually exceeded two billion dollars. Since 1919 the United States has doubled her trade with China, and trebled that with Japan, which receives the lion's share of America's Far Eastern trade. In the author's opinion, the United States can bide her time, since all her interests in the Pacific appear to be satisfied. Japan, on the other hand, is in dire need of expansion. The Philippines, Yap, and Guam, the author believes, constitute focal points of the clashing Japanese-American interests. It is there, he believes, that the fate of the world will be decided. He does not consider the Philippine Independence Bill enacted by the last Congress as the final word upon the subject.

In the author's opinion, a naval war between Japan and the United States is at present out of question without the active cooperation of a third power. He considers the naval establishments in Hawaii and the Philippines inadequate for war time requirements. He believes that in the event of war, naval superiority favors the United States, but that the probable theater of operations accrues to Japan's advantage. The great distances involved affect the United States unfavorably, while her isolation and the hostility of China and Soviet Russia have a similarly adverse effect upon Japan.

The Chino-Japanese conflict after two years established Japan as the absolute master of the Far East. Japan achieved this result at a comparatively small human sacrifice, but at a staggering financial cost. Japan's shipping and banking interests in South China were practically destroyed.

Relations between Soviet Russia and Japan, the author believes, are somewhat difficult to gauge. Notwithstanding the conflicting interests of these Powers, he writes, war between them in the near future is unthinkable. Nevertheless, it is within Japan's power to set the day which will witness the elimination of Russia from the Far East. Whether this will occur before or after the settlement of the Pacific problem, the author states, remains to be seen. In any event, it will compel Russia to face westward again, and whatever her political complex might then be, she will once more become an active factor in European affairs.

Although Japan seeks to cultivate friendly relations with France, an actual alliance, the author writes, is not considered at this time. Such an alliance might tend to force Great Britain into the American camp. The author does not believe that either France or the Netherlands would assist Japan in a war against the United States.

Summarizing all factors, the author concludes that we are on the threshold of the great struggle for the mastery of the Far East and the Pacific; that Japan and the United States will play the principal roles in that struggle which is destined to decide the primacy between the white and yellow races. The outcome of that struggle, the author believes, will affect materially the future of Europe and the entire world.

GERMANY—*Militär Wochenblatt*—January 25, 1933. "Tactical Control of Anti-Aircraft Artillery," by No. 337.

The peculiar character of its material, and the special mission for which it is designed, renders anti-aircraft artillery unsuited for employment against terrestrial targets. In order to perform its functions efficiently and execute its missions effectively, the author writes, it is essential that the antiaircraft artillery commander be at all times thoroughly informed of the situation within the area which he must protect. For this reason, the author holds, antiaircraft artillery should never be placed under the tactical control of the divisional or higher artillery commander. He believes that the most efficient employment of antiaircraft artillery demand that it be at all times under the direct control of the division and higher commanders.

MEXICO—*Revista del Ejercito y de la Marina*—March, 1933.
"The Army National Bank," by General Rafael Aguirre Majarrez.

General Depression hit Mexico as severely as it did other parts of the world. That the army, like all armies, traditionally poorly paid, should feel the pinch of an economically adverse situation, is to be expected. That an army under such circumstances should seek to lift itself out of this depression by its own boot straps is, to say the least, a decidedly novel experiment. This the author seeks to accomplish by means of an Army National Bank. He submitted to the President of the Republic, General Rodriguez, a project for the establishment of such an institution whose stockholders would consist of the officer personnel of the army.

The March issue of the *Revista del Ejercito y de la Marina* publishes the text of General Aguirre's proposal. He would allot shares to officers according to rank, which is but another way of saying that the official rate of pay determines the number of shares each officer may acquire. Payments are to be made in ten monthly installments, each representing about five per cent of the officer's pay per month. The author calculates that in ten months the paid-up capital would amount to $847,443.60 (Mex.).

This will prove a novel experiment indeed. For the present, it still lacks presidential approval. If put into execution, it will be interesting to watch its progress. Difficulties are to be expected, but evidently the author of the plan does not include among these the possibility that certain officers may not be financially able to acquire the allotted number of shares, for apparently the acquisition of the prescribed number of shares would be obligatory, and with each promotion in grade there would go an automatic increase in the number of shares allotted.

No doubt General Aguirre could obtain some very valuable information if he looked into the effects of mandatory pay reductions upon the comparatively higher paid officers of the United States Army. The author credits his colleagues with financial and business acumen that is not ordinarily associated with the profession of arms. Whether that optimism is justified remains to be seen. If put into execution, let us hope, this beautiful project will not result in giving a literal meaning to the Filipino figure of speech: "los paraos andan y los banqueros son pobres."

URUGUAY—*Revista Militar y Naval*—March, 1933.
"Armaments of the Principal Powers."

A statistical tabulation, though not so stated, seemingly obtained from German sources.

	Population	Army	Air-planes	Guns	M.G.'s
Russia	153,000,000	1,200,000	1,950	3,000	23,000
France	40,700,000	655,000	3,000	2,920	35,000
Great Britain.	45,600,000	422,000	1,853	2,400	14,200
Italy	42,500,000	288,000	1,507	2,132	4,300
Germany	63,300,000	100,000	....	310	1,926
Czechoslovakia.	14,600,000	140,000	687	1,276	9,800
Poland	30,400,000	298,000	1,309	1,850	9,700
Belgium	8,000,000	66,000	358	859	4,173
United States.	121,000,000	130,000	2,800	1,800*	30,000*
Japan	64,500,000	210,000	1,939	1,500*	20,000*

* Approximate figures.

HUNGARY—*Magyar Katonai Szemle*—January, 1933.
"Organization of the A.A. Defense of the Civilian Population in Germany," by Colonel Stephen Petróczy, retired.

The latest decree relative to the organization of the A.A. defense of the civilian population, released by the German government last spring, is the result of methodical, scientific study of the question. The solution not only seeks to provide for all contingencies, but endeavors with equal care to provide the best possible defensive plan at a minimum of expense.

The basic principle of the plan is that it makes the entire police force of the nation, and as far as practicable the entire force of civil officials and organized society itself, a part in the A.A. defense of the nation. Appreciating the fact that existing agencies for the preservation of public order and first aid would not be adequate to meet all demands of an air attack in the event of war, the German defensive plan calls for certain auxiliary organizations. These constitute the active portion of the population, while the remainder is designated as the passive portion. The active element is to receive special training and equipment, while the passive element is to be provided with the necessary protective shelters. The general conduct of the A.A. and Gas Defense is entrusted to the police. Industries, the railroad, and postal services are required to establish their special defensive organization. Cooperation between these agencies is compulsory.

Each community and organization is required to set aside the funds necessary for the effective func-

tioning of its own defensive system. This is an innovation. France provides the funds by public appropriation, while Poland relies mainly upon voluntary contributions through the A.A. and Gas Defense League.

The German plan places great emphasis upon the proper instruction and enlightenment of the "passive" portion of its population. The actual work in this important phase of preparedness is entrusted to the German A.A. Defense League and its affiliates. The press, radio broadcasting system, movies, schools and colleges are required to lend full assistance in this respect. Members of the active element, who, in case of war, may suffer injuries, are to be placed upon an equal footing with other war casualties.

The police is to organize in every community a council of technical advisors to consist of a representative each of the municipal board, industries, railways, postal service, ambulance service, Red Cross and similar organizations, the fire department, the National Labor Defense, schools, associations, the press, and selected technical experts. An Executive Board of five members and ten committees serves to promote the effective functioning of this otherwise unwieldy council. The mission of the council is to provide for public order, first aid, promotion of self-help, decentralization of protective installations, organization of a fire-fighting unit for each house, establishment of bomb and gas proof shelters, and sanitation. All services are required to be rendered without compensation.

The *Pesti Naplo*, prominent daily of Budapest, Hungary, in its May 4 issue, publishes a London news dispatch quoting Thomas Reid, Canadian M.P., who in a dramatic speech before the House of Commons at Ottawa declared that the British Columbia coast is overrun by Japanese spies disguised as seamen and fishermen. Japanese naval officers in disguise accept any employment on fishing craft in order to familiarize themselves with the coastal waters and bays of western Canada, which according to Mr. Reid might serve as bases of operations for an expeditionary force.

GREAT BRITAIN—*The Army, Navy and Air Force Gazette*—March 9, 1933.

"Bessarabia," by C. F. A. Maitland-Macgill-Crichton.

Bessarabia is the territory between the Rivers Pruth and Dniester and the Black Sea. Transferred to Russia by Turkey in 1812, it continued a Russian province until 1917, when it passed under Roumanian domination. Soviet Russia never recognized this change and her maps still show the province within the boundaries of U. S. S. R. Although the soviet authorities have declared that they would not go to war over the lost province, the Soviet press constantly refers to it as the "Alsace on the Dniester." The question induced Roumania to seek an alliance with Poland since her other allies, Jugoslavia and Czechoslovakia declared their unwillingness to defend Roumanian frontiers against Russia. In the author's opinion, the treaty which transferred Bessarabia to Roumania is without legal effect, partly because one of the signatories failed to ratify it but mainly because Russia was not a party to it, and she has consistently protested against Roumania's action. The Roumanian case is based on historic grounds, claiming that Bessarabia had been part of Roumania from time immemorial until forcibly severed in 1812. Russia counters that claims based on a situation prior to 1812 are impossible since at that time Roumania did not even exist. There were only two Turkish provinces, Moldavia and Wallachia, without any trace of Roumanian national sentiment. Russia lost a part of the province as a result of the Crimean War. It passed to Roumania in 1859, but was recovered by Russia in 1878. As a compensation Roumania then acquired the Dobroudja.

The Bolsheviks likewise challenge the means whereby the present situation was created and charge the Roumanians with bad faith. They set forth that the so-called "National Council" which voted the transfer of allegiance, was not truly representative of the people, and they insist upon a plebiscite to determine the wishes of the Bessarabians. The author points out that the moral value of the Russian case lies in the fact that the Russians are not claiming for themselves any more right than Roumania to dispose of Bessarabia.

—*Journal of the Royal United Service Institution*—May, 1933 "The International Situation—The European Crisis," by Major E. W. Polson-Newman, B.A., F.R.G.S.

The author summarizes the chief causes of the European crisis as follows:

1. The general collapse of international confidence together with the political tension caused by the situation in the Polish Corridor, Central Europe, and on the Adriatic.

2. The unsettled state of affairs in Germany as a result of Hitler's accession to power. Its disturbing effect upon Germany's neighbors. It increased the tension in the Corridor.

3. The bad moral effect of the economic depression.

4. The threatened failure of the disarmament conference arising out of the fact that the *status quo* is rapidly dividing Europe into two hostile camps, each desiring adequate armaments either for aggressive or defensive purposes, and the consequent tendency of delegations to see what they can get or keep rather than what they can do without or give up.

The author writes that the combined efforts of these causes produced the disarmament deadlock, which is in reality the pivot on which the whole situation has turned. He points out that all efforts to bring about disarmament without removing the potential causes of war is "putting the cart before the horse." It springs from the delusion that cooperation is compatible with the *status quo* of Versailles, St. Germain and Trianon. The author believes that the most important result of the MacDonald-Mussolini collaboration has been the realization that treaty revision must in principle precede disarmament. Treaty revision, he states, is the only open door to peace, and that without revision, war will sooner or later be inevitable.

Great Britain and Italy, on the whole, seem to agree on most points. The attitude of France is, however, more complex as she must take into consideration the

attitude of her allies, Poland and the Little Entente. M. Titulesco, spokesman of the Little Entente, and other champions of the *status quo,* the author writes, have been resorting to every conceivable argument to convince the French that treaty revision can only lead to war. That, of course, compels France to pursue a cautious course to avoid ultimate isolation in the face of a rearmed Germany.

The author regards the situation in Central Europe and on the Adriatic as the most important factors in the present crisis, but he sees in the Polish-German relations the most immediate danger. With feeling running very high in Danzig, the Corridor, and in Upper Silesia, a mere incident might easily entail serious complications. Danzig is a stronghold of German nationalism. The extensive privileges enjoyed by the Poles in the Free City have been a continual source of political irritation. A grave situation may quickly arise. In Silesia the bad feeling arises chiefly out of the Corridor question but is intensified by the personal inconvenience of individuals. It is another area where the Polish-German question may easily come to a head.

INDIA—*The Journal of the United Service Institution of India*—October, 1932.

"The Cut in Pay," editorial.

This editorial is quoted practically in its entirety because of its timely interest to officers of the military and naval services of the United States.

"In his pay bill for the month of November, 1931, every officer in the employ of the Government of India found himself confronted for the first time by that unwelcome item "Deduction on account of temporary ten per cent cut in pay." He was told that the condition of Indian finances was such that this sacrifice was demanded of him as much by patriotism as by necessity, and he accepted it on those grounds, comforting himself with the assurance that it *was* temporary. He has now had ten months' experience of this reduction in his income, and he would be more than human if, as the year draws to its close, he were not wondering whether these reasons of patriotism and necessity still hold, or whether the time is approaching when it might wisely and safely be demonstrated that the cut was indeed temporary.

"The truth is that the officer, especially the junior married one, whether civil or military, has found the effects of the cut much more serious than was anticipated. A good deal of nonsense has been talked, usually by those whose experience is limited, about the high standard of living amongst European officials in India, but no one who had any first-hand knowledge of conditions in the ordinary station believed that the average married couple wasted much of their substance in riotous living. Nevertheless, when the cut fell upon them, the official and his wife started off optimistically enough to reduce "their standard of living." It was then that they discovered there really was not very much that they could reduce. They could not move into a smaller house—there were no smaller houses and the hotels of India are as expensive as they are bad. Servants were already reduced to the minimum unavoidable. * * * Something could be saved * * * by giving up the occasional dinner party to their friends, by passing a fraction of their cut to their servants * * *. But the sum total of their efforts—and they did make real, honest efforts—was grievously small; few of the larger items of the family budget could be seriously touched. Rent, servants' wages, regimental subscriptions, income tax, family pension funds, clothing, stores bills, education and insurances, all were as before; any slight reduction in one was counterbalanced by increases in others. Indeed with increased customs duties and higher income tax, the cut was in practice found to be fifteen per cent rather than ten.

"After doing their best to reduce expenses to the utmost practical limit * * * it is safe to say that there are no junior, and few even comparatively senior Government officers, with families and without private means, who do not find it desperately difficult to provide for their children's education. Either the children are at home—and there has been no cut in school fees—or they are still in this country and, if they are to have any hope of future schooling, money must be found for their educational insurance. The amount that could be spared for such educational and for life insurance was calculated before pay was cut, but the same premiums must still be paid from the reduced pay. This has been one of the main factors of upsetting the family budget, and it is not often realized in how many cases the insurance policy has had to be pawned to cover either an overdraft at the bank or its own premium. On the surface things may not seem so very changed—less entertaining, families that stay longer in the plains, a greater keenness to get any job with a little extra pay; beyond this all is much as it was. But underneath is a growing anxiety as to what will happen if the overdrafts go on increasing, month after month, year after year. *The cut may be temporary, but if it continues much longer, its effects will be permanent.* For most married British officers of every Service in India the alternatives are a gradually increasing indebtedness with all that this entails in anxiety, ill-health, discontent and loss of efficiency, or a restoration of the cut in some form.

"It is not only because of the increasingly serious position of the individual officer, but because of its adverse effects on the contentment and efficiency of the Services as a whole that every possible avenue of alternative economy should be explored in order that the cut may be restored. Above all things it is essential that, before legislation to prolong the cut another year is brought forward, it should be conclusively shown that its retention is necessary for the financial stability of India. Compared with a year ago the financial position of India has vastly improved. Civil disobedience with all its cost in disturbance and delay in collecting revenue is practically dead; agricultural prospects are on the whole good; drastic economies made in expenditure should produce a balanced budget. Unless there is some unexpected deterioration in the restoration of the cut ought not unduly to strain India's resources in 1933.

Organization Activities

Brigadier General E. J. Stackpole, Jr.

52nd Cavalry Brigade

Harrisburg, Pa.

THE MILITARY RECORD OF BRIGADIER GENERAL EDWARD J. STACKPOLE, Jr.

STARTED military career by attending Plattsburg Camps in 1915 and 1916. Took examination for and received commission of Second Lieutenant of Infantry, December, 1916. Ordered to active duty in the first Officers Training Camp, Madison Barracks, New York, on the declaration of war with Germany.

Promoted to Captain of Infantry, ORC, August, 1917, and assigned to Camp Dix, New Jersey. Transferred the same month to the 28th Division, Camp Hancock, Augusta, Georgia.

Functioned as Division Bayonet Instructor for the 28th Division until May, 1918, when the Division sailed for France. At this time was assigned to command Company "M," 110th Infantry. Commanded this Company overseas until sent to hospital, September 5, 1918.

Wounded in action: August 1, 1918, airplane bomb; August 25, 1918, hand grenade; September 5, 1918, machine gun bullets in both legs.

Awarded Distinguished Service Cross and Purple Heart.

In hospitals France and United States, September, 1918 until January, 1921.

When the 28th Division was reorganized was appointed Colonel and placed in command of the 8th Infantry, Pennsylvania National Guard, which Regiment was converted into the 104th Cavalry in 1921. Continued in command of the Regiment until promoted to Brigadier General in May, 1933, to command 52d Cavalry Brigade, vice Brigadier General E. C. Shannon, who was promoted to command the 28th Division.

Graduate of Cavalry School, advanced N.G. & R.O. class 1928.

President, National Guard Association of Pennsylvania, 1929-1931.

Member of the Executive Council, U. S. Cavalry Association, 1932 and 1933.

6th Cavalry

Fort Oglethorpe, Georgia

THE regiment left the latter part of March for a hike to Fort Benning, Georgia, to participate in the corps area maneuvers but after two nights out from the post the regiment was ordered back to Fort Oglethorpe to take part in the Civilian Conservation Corps work.

The regiment has been very busy with the reception and conditioning of 5,600 C. C. C. selectees since the first part of May. Colonel Gordon Johnston, commanding the 6th Cavalry, is in command of District C, of the Fourth Corps Area, which consists of 42 companies located in 40 forestry work camps, two of the camps being double ones. The regiment has about 75 non-commissioned officers and 25 privates as the Regular Army cadre present with the companies in the field, while most of the officers on duty with the troops of the regiment have been sent out in charge of companies.

The following officers have joined the regiment within the last few months: Major Frederic W. Boye, Captain Charles F. Houghton, 1st Lt. H. Jordan Theis, and 1st Lt. Harry W. Johnson.

Captain Harry Knight is under orders to attend a course of instruction at the Cavalry School during the coming school year.

103d Cavalry

Philadelphia, Pennsylvania

THE First Squadron, 103rd Cavalry, Pennsylvania National Guard, under the command of Major Edward Hoopes was reviewed on Friday evening, June

30, 1933 by Lieut. Colonel John W. Converse prior to holding its first annual horse show at the armory in West Philadelphia.

Five events were judged by Colonel Converse and Colonel R. D. Newman, Cavalry, Senior instructor, 52nd Cavalry Brigade, for the State of Pennsylvania. The Squadron Stable Sergeants, Eugene A. Fischer, Troop A., Milton McHenry, Troop B., and Gilbert W. Jenkins, Troop C, were in complete charge of the show.

The entrants, limited to non-commissioned officers and troopers, were given no choice of horses. Each troop drew its mounts by lot, and the contestants did the best they could with whatever animals they had assigned. Ribbon awards were based on horsemanship and performance rather than on the conformation of the mount. Individuals were permitted to enter only one class.

Terminating the events was a novelty class which called for ability at polo, good form with the saber, marksmanship with the pistol, and jumping.

Music was furnished by the Henry H. Huston 2nd Post, American Legion, Drum and Bugle Corps.

The summary of events shows that A Troop secured the greatest number of places:

Class I—N. C. O's. jumping, twice around four 5 ft. 6 in. jumps. Performance 25%, Horsemanship 15%—Won by Sergeant Edward P. O'Tone, Troop A—Second Corp. Robert N. Sangro, Troop B, Third Corp. Samuel J. Miller, Troop C.

Class II—Troopers, full pack field equipment, walk, trot, and gallop, stand, mount and dismount, Equipment 50%, manners and way of going 25%, appearance of Trooper 25%—Won by Corp. William A. Taylor, Troop C, Second Prt. William O. Patchen, Troop A, Third Pvt. 1cl. Lewis J. Nicolucci, Troop C.

Class III—Troopers, bareback jumping, twice around four 3 ft. jumps. Performance 50%, horsemanship 50%. Won by Pvt. 1cl. Lawrence K. Maisel, Troop B, second Pvt. 1st Cl. Vearl L. Ball, Troop C. Third Pvt. L. Elsworth, Troop A.

Class IV—Open, horsemanship, walk, trot, gallop, back, turn on forehand, pass to right and left, stand quietly at mount and dismount, performance 75%, appearance of horse and rider 25%—Won by Sergeant Thomas J. Culberten, Troop A, second Pvt. 1cl John J. McKernan, Troop C, third Sergeant Robert E. O'Brien, Troop A.

Class V—Novelty—Won by Corp. George S. Ruffee, Troop A, second Pvt. Paul Hoffnnam, Troop C. Third Corp. James B. Jenks.

305th Cavalry

Philadelphia, Pennsylvania

AFTER the receipt of the new summer training schedule which allowed only two field officers of the Regiment to take active duty training, the inactive training schedule was suspended. Officers of the Regiment were keenly disappointed when it was learned there was to be no camp this summer. It is felt, however, that all profited by the intensive training embodied in our inactive training schedule.

On Friday, June 16th, in a well planned dinner party, our Chief of Staff, Colonel George T. Bowman, was presented with a farewell gift in honor of his retirement from active service with the Regular Army.

Since the last issue of the JOURNAL we have had two promotions in the Regiment:

To Captain, Cavalry Reserve:

1st Lt. Frederick Streicher
1st Lt. Horace A. Franklin

306th Cavalry

Baltimore, Maryland

MAJOR E. W. TAULBEE, Cavalry, the Unit Instructor, was ordered recently to duty with the Civilian Conservation Corps. Colonel Harry N. Cootes, Cavalry, the newly detailed Liaison Officer at Third Corps Area Headquarters, is Acting Unit Instructor of the 306th, during the absence of Major Taulbee.

The past year's work of the officers of the 306th Cavalry has been characterized by a high degree of service. From the Colonel of the Regiment down to the Lieutenants a marked degree of interest has been manifested.

Group schools, pistol marksmanship, and equitation classes have been well attended and much improvement has been noted in all phases of work.

The coming year, despite the cuts in active duty, promises to be a very successful one. The officers of this regiment exhibit splendid morale and esprit and are determined to "carry on" despite the temporary setback in active duty training due to lack of Congressional appropriations.

Second Squadron and Machine Gun Troop, 306th Cavalry

Washington, D. C.

THE Squadron finished an unusually successful year of instruction at conference schools and equitation classes, on June 30, 1933.

A most gratifying attendance was present at the 62nd Cavalry Division's farewell party to our esteemed retiring Chief of Staff, Colonel George T. Bowman, Cavalry, held at the Mayflower Hotel, Washington, D. C., on Saturday night, June 10, 1933.

307th Cavalry

Richmond, Virginia

THE Extension School year just completed has been very successful in respect to the number enrolled and subcourses completed.

Lieutenant Colonel F. K. Chapin, Major Harold H. Jacobs, and Lieutenants Ceeil Hope Miles and Sam H. Franklin, Jr., attended the dinner dance at the Mayflower, Washington, D. C., in compliment to Colonel and Mrs. George T. Bowman.

Lieutenant Colonel William Henry Clifford, the Regimental Commander, has been ordered to active duty at Fort Myer, Va., during the period August 13 to 26, 1933.

Lieutenants Leonard T. Preston and Robert G. Southall, II, have received their Certificates of Capacity for promotion to 1st Lieutenant.

Lieutenants George Cole Scott, Jr., and George Washington Day have taken the practical test required for a Certificate of Capacity for promotion and Captain Edward C. Harrison, Jr., and Lieutenant James Gifford Earnest, Jr., have applied for the practical test.

2nd Lieut. Richard F. Beirne, Jr., Cav.-Res., received his appointment on June 9, 1933.

Lieutenants Walter Gray Robertson, Woods Garth Talman, William Temple Talman (brothers), and Thomas Tunstall Adams have recently joined the regiment.

The following Second Lieutenants, recent graduates from the Virginia Military Institute, have been assigned to the Regiment:

Lieutenants John H. Carrico, Samuel G. Crews, Jack L. Epps, Jr., William H. Face, Jr., Winfred S. Hayman, Landon Hilliard, Jr., Ernest C. Hudgins, Jr., Fowler P. Johnson, William P. Jones, Jr., Marsden C. Jordan, George M. King, Jr., Russel A. McCoy, Jr., Lawrence C. Page, Jr., Charles A. Payne, Jr., William H. Pettigrew, Carl A. Steidtmann, Ashby B. Taylor, Jr., William F. Tompkins, Jack T. Walker, Ashby S. Wilson, and Percival C. Wooters.

2nd Lieutenant Joseph E. Dillon, 3211 Omohundro St., Norfolk, Va., a graduate of the Agricultural and Mechanical College of Texas, College Station, Texas, has also been assigned to this regiment.

Third Squadron and Machine Gun Troop, 307th Cavalry

Norfolk, Virginia

COLONEL GEORGE T. BOWMAN, Cavalry, Chief of Staff of the 62nd Cavalry Division inspected the activities of the Squadron on May 23. This will be the last inspection by Colonel Bowman, as he retires on June 30, 1933. He has always been helpful and understanding and has been a true guide, counselor and friend, and all members of the squadron sincerely regret to see him retire.

The following named Reserve Officers were assigned to the 307th Cavalry by Special Orders No. 10, Hq. 62nd Cavalry Division, 1933, and it is expected that they will be assigned to the Squadron, as they all reside in the vicinity of Norfolk:

2nd Lieut. Joseph E. Dillon, Cav.-Res.
2nd Lieut. William H. Face, Cav.-Res.
2nd Lieut. Winfred S. Hayman, Cav.-Res.
2nd Lieut. Landon Hilliard, Jr., Cav.-Res.
2nd Lieut. Marsden C. Jordan, Cav.-Res.
2nd Lieut. Russell A. McCoy, Jr., Cav.-Res.
2nd Lieut. Lawrence C. Page, Jr., Cav.-Res.
2nd Lieut. Ashby B. Taylor, Jr., Cav.-Res.

The above officers are all 1933 graduates of Virginia Military Institute with the exception of Lieut. Dillon, who is a 1933 graduate of Agricultural and Mechanical College of Texas. These young officers will be a decided addition to the Squadron.

308th Cavalry

Pittsburgh, Pennsylvania

THE 308th Cavalry Field at Aspinwall, Pa., is undergoing a complete change. A new stable is under construction, the polo field is in daily use and plans include a complete renovation of the Clubhouse.

The appearance of the whole property will be greatly improved.

After weeks of uncertainty as to whether there would be a camp this summer, orders are out for eighteen 308th Cavalry officers to proceed to Fort Myer, Va., to conduct C.M.T.C training.

The promotion of Captain George W. Connor to the grade of Major has recently been announced. The Regiment congratulates Major Connor.

Recent assignments to the 308th Cavalry include:

Capt. Robert C. Wallace and, 1st Lt. Paul G. Dingledy, both living in New Castle, Pa.

2nd Lt. Willian C. Hood, Jr., living in Uniontown, Pa., and,

2nd Lts. William C. Calhoun, James J. Heffner, and C. Victor VerMilyea, all graduates of the Virginia Military Institute.

The inactive duty training season which has just closed has been a pleasant and instructive one, and we all feel that under plans which have been worked out by our Regimental S-3, Capt. Harry B. Peebles, the coming year should be more so.

862nd Field Artillery (Horse)

Baltimore, Maryland

THE number of officers of the Regiment designated for duty with the C.M.T.C. at Fort Hoyle, Maryland, has been reduced from 27 to 10. The ten selected for this important service have been, under the direction of the Regimental Commander, Lieutenant Colonel Roger S. B. Hartz, busy preparing themselves for it. Those selected are:

Lieut. Col. Roger S. B. Hartz,
Major Frank Gosnell,
Capt. Harry S. Middendorf,
Capt. Jack V. Thomas,
1st Lieut. Harold W. Morford,
1st Lieut. Marion J. Woodford,
2nd Lieut. Levin G. Shreve,
2nd Lieut. Allen A. Davis,
2nd Lieut. Daniel G. McIntosh, III,
2nd Lieut. Thomas G. Young, Jr.

The conferences, riding classes, and pistol firing have been discontinued for the summer. The officers of the Regiment sincerely regret, as do all members of the Division, the retirement of the Chief of Staff, Colonel George T. Bowman, Cavalry. They are keenly appreciative of the untiring efforts of Colonel Bowman to promote the interests and efficiency of the Regiment and of its individual members. He has been not only a chief but also a disinterested friend.